ORDER NO. VRD9402M104

Service Manual

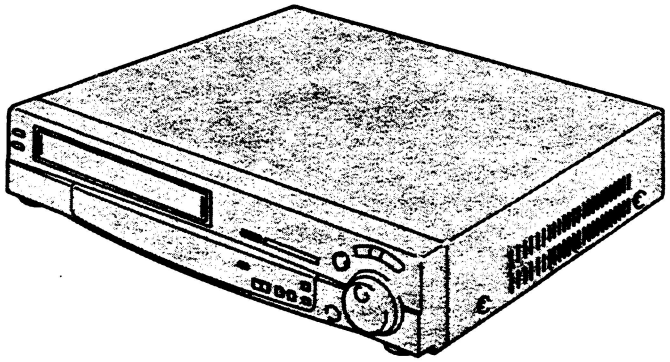
Simplified

Video Cassette Recorder

Panasonic VHS PAL

Hi-Fi HQ

NV-HD101EB/EC EO



K-MECHANISM

SPECIFICATIONS

ITEM	SPECIFICATION
POWER	SOURCE: 220−240 V AC 50/60 Hz
	CONSUMPTION: 33 watts (NV-HD101EB/EC) 32 watts (NV-HD101EO)
RECORDING SYSTEM	2 rotary heads, helical scanning system
	PAL
TV TUNER SYSTEM	VHF I: CHE2~CHS3 VHF III: CHM1~CHE12 VHF H: CHU1~CHS41 (PAL/SECAM B) UHF: CH21~CH69 (PAL/SECAM G) 75Ω terminated
RF OUT SYSTEM	UHF: 36±4 (PAL/SECAM G) 70$^{+3}_{-5}$dBμ, 75Ω terminated
VIDEO	HEADS: 4 rotary heads 1 pair for SP recording, playback and trick play (L-R heads) 1 pair for LP recording, playback and trick play (L′-R′ heads)
	INPUT: VIDEO IN Connector (Phono type) 1.0 Vp-p, 75Ω unbalanced (NV-HD101EB/EO) EURO AV Connector (21 pin) 1.0 Vp-p, 75Ω unbalanced
	OUTPUT: VIDEO OUT Connector (Phono type) 1.0 Vp-p, 75Ω unbalanced (NV-HD101EB/EC) EURO AV Connector (21 pin) 1.0 Vp-p, 75Ω unbalanced
AUDIO	HEAD: 1 Stationary head (Normal Audio) 2 rotary heads (Hi-Fi 2CH)

ITEM	SPECIFICATION
AUDIO	INPUT: AUDIO IN Connector (Phono type) More than −10 dBV (316 mV), more than 47 kΩ EURO AV Connector (21 pin) More than −6 dBV (500 mV), more than 10 kΩ MICROPHONE JACK −70 dBV
	OUTPUT: AUDIO OUT Connector (Phono type) −8 dBV (400 mV), Less than 1 kΩ EURO AV Connector (21 pin) −6 dBV (500 mV), Less than 10 kΩ
	TRACK: 1 track (Normal-mono only) 2 channels (Hi-Fi Sound-Stereo)
TAPE FORMAT	VHS Cassette tape (Tape width 12.7 mm)
TAPE SPEED	SP: 23.39 mm/s (PAL), 33.35 mm/s (NTSC) LP: 11.695 mm/s (PAL), 11.12 mm/s (NTSC) Record/Playback Time: SP: 4 hours with 240 min. type tape LP: 8 hours with 240 min. type tape FF/REW Time: 2.5 min. with 180 min. type tape
DIMENSIONS	430 (W) × 96 (H) × 362 (D) mm
WEIGHT	5.3 kg
STANDARD ACCESSORIES	1 pc. DIN-RF Cable 1 pc. Infra-red Remote Controller 1 pc. Audio Cables 1 pc. AC Mains Lead

Weight and dimensions shown are approximate.
Specifications are subject to change without notice.

Panasonic

INTRODUCTION

This service manual contains technical informations which will help service personnel to understand and service the VHS Video Cassette Recorder NV-HD101EB/EC/EO.
Since this model has been developed from NV-HD100EB/EC/EO, this manual does not cover the same part which is already described in the service manual for NV-HD100EB/EC/EO. Therefore, when servicing, refer to the descriptions in the one for NV-HD100EB/EC/EO Order No. VRD9304M117, VRD9306M130, VRD9303M110.

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1. COMPARISON CHART

The following charts show the difference between the basic model NV-HD100EB/EC/EO and the new model NV-HD101EB/EC/EO. The first chart shows the mechanical replacement parts of NV-HD101EB/EC/EO which are different from the ones of NV-HD100EB/EC/EO. The second chart shows the electrical replacement parts of NV-HD101EB/EC/EO which are different from the ones of NV-HD100EB/EC/EO. The electrical parts on the circuit boards are listed on the parts list in the last section.

Note: IMPORTANT SAFETY NOTICE
Components identified with the mark 〈!〉 have the special characterlistics for safety. When replacing any of these components, use only the same type.

MECHANICAL REPLACEMENT PARTS FOR NV-HD101EB (A)=ADDED, (C)=CHANGED, (D)=DELETED

REF. NO.	NV-HD100EB	NV-HD101EB	PCS	PARTS NAME & DESCRIPTIONS	REMARKS
103 (2)	VMA8765	VMA8930	1	ROTOR STOPPER	(C)
109 (2)	VDG0861	VDG0956	1	SUPPLY REEL GEAR	(C)
110 (2)	VDG0862	VDG0957	1	TAKE UP REEL GEAR	(C)
128 (2)	VXA4797	VXA5138	1	SS BRAKE BASE UNIT	(C)
140 (2)	VXL2229	VXL2366	1	IDLER ARM UNIT	(C)
201 (3)	VYP5212	VYP5501	1	FRONT PANEL UNIT	(C)
202 (3)	VYF1950	VYF1940	1	DOOR PANEL UNIT	(C)
300 (4)	VQT5170	VQT5613	1	OPERATING INSTRUCTIONS (FINNISH/PORTUGUESE)	〈!〉 (C)
300 (4)	VQT5172	VQT5614	1	OPERATING INSTRUCTIONS (SWEDISH/DANISH)	〈!〉 (C)
301 (4)	VQC2119	—	1→0	PROGRAMME SHEET	(D)
305 (4)	VEQ1482	VEQ1539	1	REMOTE CONTROLLER	(C)
306 (4)	VGP3344	—	1→0	DOOR PANEL	(D)
307 (4)	VKF1977	—	1→0	BATTERY COVER	(D)
308 (4)	VGQ3046	—	1→0	CAP	(D)
320 (4)	VPG6764	VPG7378	1	PACKING	(C)

ELECTRICAL REPLACEMENT PARTS FOR NV-HD101EB (A)=ADDED, (C)=CHANGED, (D)=DELETED

REF. NO.	NV-HD100EB	NV-HD101EB	PCS	PARTS NAME & DESCRIPTIONS	REMARKS
	VEP03977J	VEP03977AF	1	MAIN C.B.A.	(C)
D6013	—	MA151A	0→1	DIODE	(A)
R6008	—	ERJ6GMYJ333	0→1	M. RESISTOR 33K	(A)

MECHANICAL REPLACEMENT PARTS FOR NV-HD101EC (A)=ADDED, (C)=CHANGED, (D)=DELETED

REF. NO.	NV-HD100EC	NV-HD101EC	PCS	PARTS NAME & DESCRIPTIONS	REMARKS
103 (2)	VMA8765	VMA8930	1	ROTOR STOPPER	(C)
109 (2)	VDG0861	VDG0956	1	SUPPLY REEL GEAR	(C)
110 (2)	VDG0862	VDG0957	1	TAKE UP REEL GEAR	(C)
128 (2)	VXA4797	VXA5138	1	SS BRAKE BASE UNIT	(C)
140 (2)	VXL2229	VXL2366	1	IDLER ARM UNIT	(C)
201 (3)	VYP5213	VYP5484	1	FRONT PANEL UNIT	(C)
202 (3)	VYF1950	VYF1940	1	DOOR PANEL UNIT	(C)
300 (4)	VQT5173	VQT5569	1	OPERATING INSTRUCTIONS (ENGLISH/FRENCH/DUTCH)	〈!〉 (C)
300 (4)	VQT5173	—	1→0	OPERATING INSTRUCTIONS (※) (ENGLISH/FRENCH/DUTCH)	〈!〉 (D)
300 (4)	VQT5174	VQT5570	1	OPERATING INSTRUCTIONS (SPANISH)	〈!〉 (C)
301 (4)	VQC2119	—	1→0	PROGRAMME SHEET	(D)
305 (4)	VEQ1508	VEQ1539	1	REMOTE CONTROLLER	(C)
306 (4)	VGP3344	—	1→0	DOOR PANEL	(D)
307 (4)	VKF1977	—	1→0	BATTERY COVER	(D)
308 (4)	VGQ3046	—	1→0	CAP	(D)
318 (4)	VPN3555	VPN3629	1	CUSHION (R) (※)	(C)
319 (4)	VPN3556	VPN3630	1	CUSHION (L) (※)	(C)
320 (4)	VPG6765	VPG7335	1	PACKING	(C)
320 (4)	VPG6765	VPG7340	1	PACKING (※)	(C)

CAUTION: (※) The product which is labeled "Made in Spain" on the Serial Label on the Rear Panel is used these parts. These parts are supplied from PAES.

ELECTRICAL REPLACEMENT PARTS FOR NV-HD101EC (A)=ADDED, (C)=CHANGED, (D)=DELETED

REF. NO.	NV-HD100EC	NV-HD101EC	PCS	PARTS NAME & DESCRIPTIONS	REMARKS
	VEP03977K	VEP03977AE	1	MAIN C.B.A.	(C)
D6013	—	MA151A	0→1	DIODE	(A)
R6008	—	ERJ6GMYJ333	0→1	M. RESISTOR 33K	(A)

MECHANICAL REPLACEMENT PARTS FOR NV-HD101EO (A)=ADDED, (C)=CHANGED, (D)=DELETED

REF. NO.	NV-HD100EO	NV-HD101EO	PCS	PARTS NAME & DESCRIPTIONS	REMARKS
103 (2)	VMA8765	VMA8930	1	ROTOR STOPPER	(C)
109 (2)	VDG0861	VDG0956	1	SUPPLY REEL GEAR	(C)
110 (2)	VDG0862	VDG0957	1	TAKE UP REEL GEAR	(C)
128 (2)	VXA4797	VXA5138	1	SS BRAKE BASE UNIT	(C)
140 (2)	VXL2229	VXL2366	1	IDLER ARM UNIT	(C)
201 (3)	VYP5209	VYP5386	1	FRONT PANEL UNIT	(C)
202 (3)	VYF1950	VYF1940	1	DOOR PANEL UNIT	(C)
300 (4)	VQT5165	—	1→0	OPERATING INSTRUCTIONS (GERMAN)	〈!〉 (D)
300 (4)	VQT5166	—	1→0	OPERATING INSTRUCTIONS (ENGLISH/FRENCH/ITALIAN)	〈!〉 (D)
300 (4)	VQT5176	—	1→0	OPERATING INSTRUCTIONS (DUTCH)	〈!〉 (D)
300 (4)	—	VQT5571	0→1	OPERATING INSTRUCTIONS (ENGLISH/DUTCH/ITALIAN)	〈!〉 (A)
301 (4)	VQC2119	—	1→0	PROGRAMME SHEET	(D)
305 (4)	VEQ1482	VEQ1539	1	REMOTE CONTROLLER	(C)
306 (4)	VGP3344	—	1→0	DOOR PANEL	(D)
307 (4)	VKF1977	—	1→0	BATTERY COVER	(D)
308 (4)	VGQ3046	—	1→0	CAP	(D)
320 (4)	VPG6903	VPG7334	1	PACKING	(C)

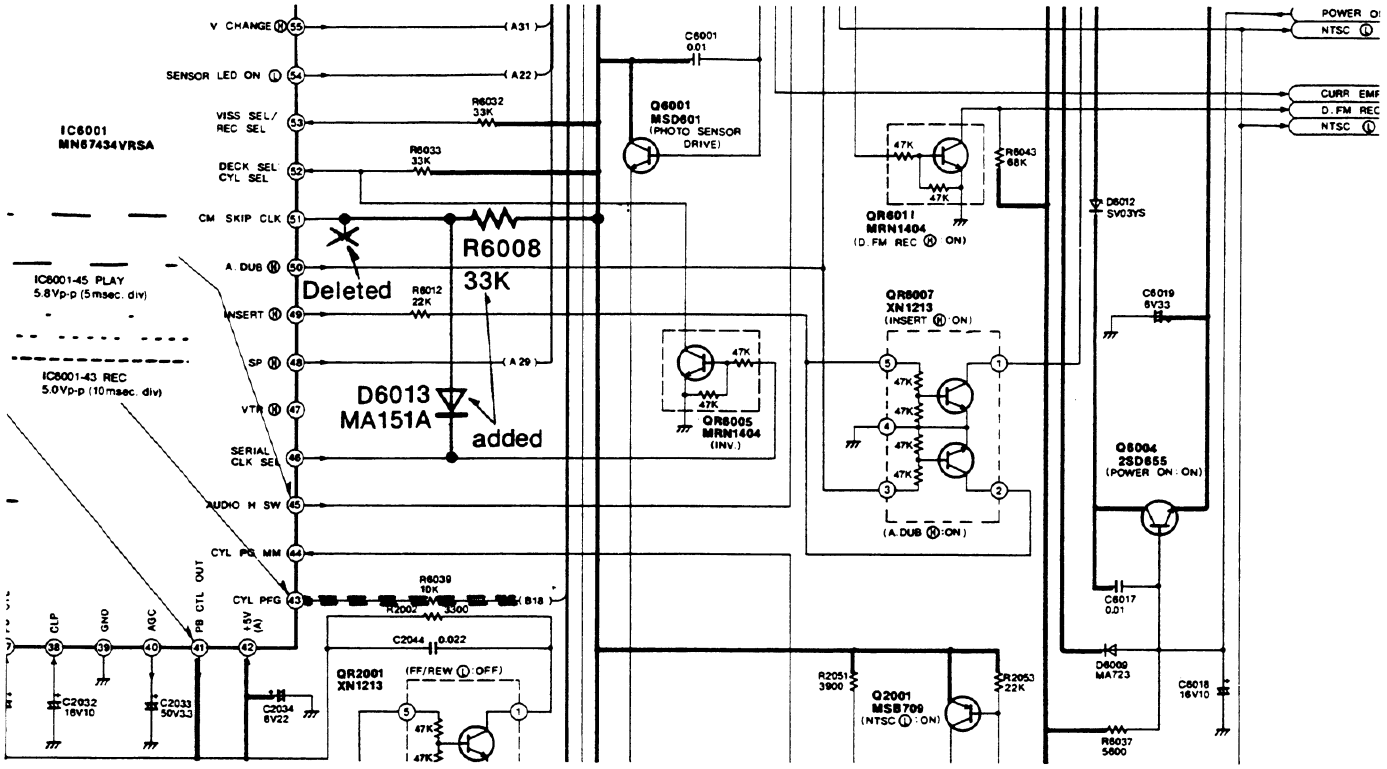
ELECTRICAL REPLACEMENT PARTS FOR NV-HD101EO (A)=ADDED, (C)=CHANGED, (D)=DELETED

REF. NO.	NV-HD100EO	NV-HD101EO	PCS	PARTS NAME & DESCRIPTIONS	REMARKS
	VEP03977G	VEP03977AD	1	MAIN C.B.A.	(C)
D6013	—	MA151A	0→1	DIODE	(A)
R6008	—	ERJ6GMYJ333	0→1	M. RESISTOR 33K	(A)

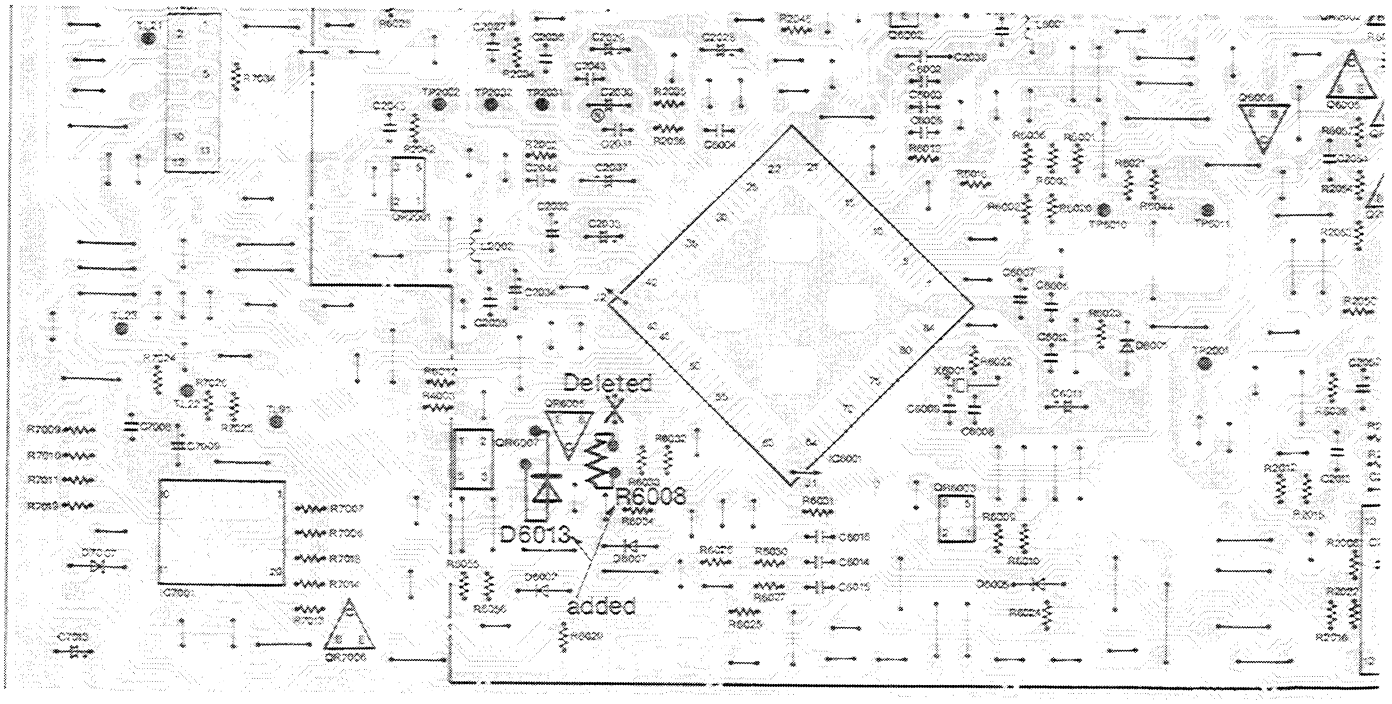
2. SCHEMATIC DIAGRAM

The following schematic diagrams show the difference from the NV-HD100EB/EC/EO.

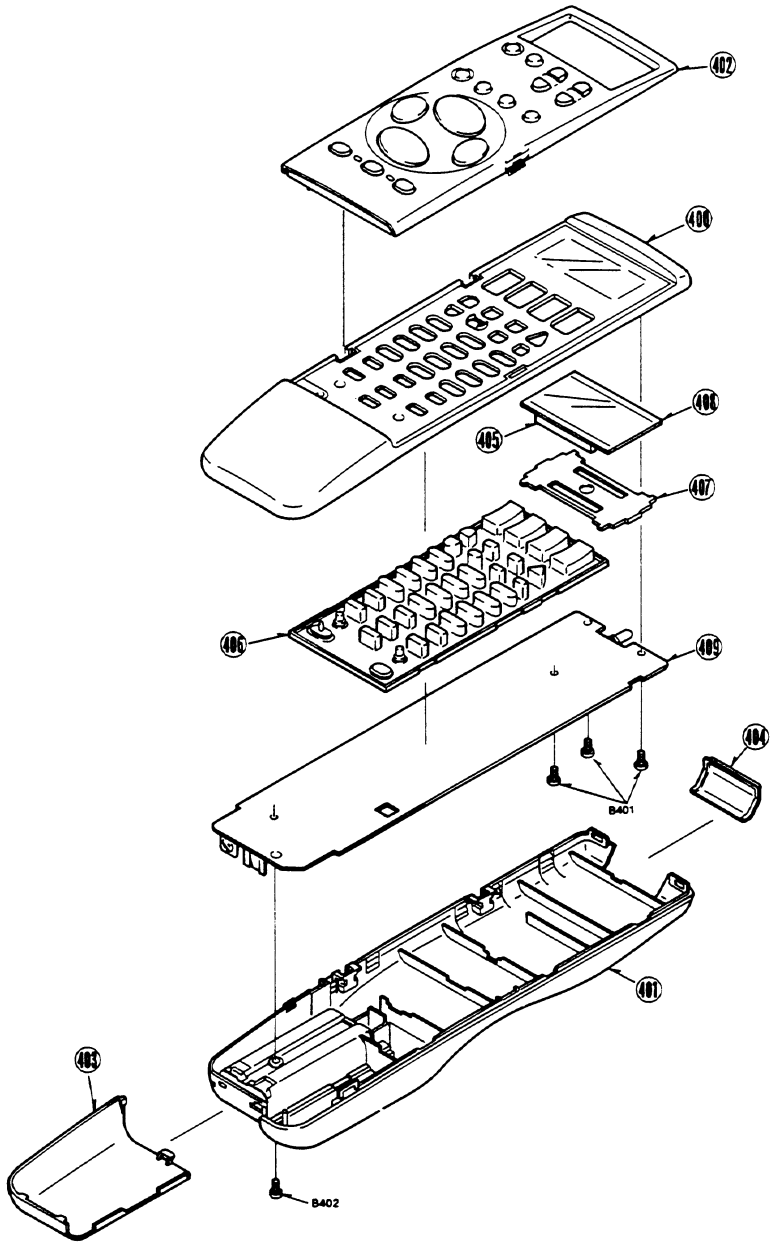
[SYSTEM CONTROL & SERVO SECTION IN MAIN SCHEMATIC DIAGRAM]



[MAIN C.B.A. (VEP03977AF: NV-HD101EB) (VEP03977AE: NV-HD101EC) (VEP03977AD: NV-HD101EO)]



3. REMOTE CONTROLLER UNIT



Note:1.* Be sure to make your orders of replacement parts according to this list.
2.IMPORTANT SAFETY NOTICE
Components identified with the mark ⟨!⟩ have the special characteristics for safety. When replacing any of these components,use only the same type.

Ref.No.		Part No.	Part Name & Description	Pcs	Remarks
400(5)		VYK5443	TOP COVER UNIT	1	
401(5)		VYK5446	BOTTOM COVER UNIT	1	
402(5)		VYK5447	DOOR PANEL UNIT	1	
403(5)		VKF2115	BATTERY COVER UNIT	1	
404(5)		VKW1802	IR WINDOW	1	
405(5)		VSQ0830	CONDUCTIVE RUBBER	2	
406(5)		VSP0774	RUBBER CONTACT	1	
407(5)		VSQ0829	LCD SPACER	1	
408(5)		VSL0309A	LCD	1	
409(5)			REMOTE CONTROLLER C.B.A.	1	THE C.B.A. IS NOT
					SUPPLIED AS SPARE
					PART.

Ref.No.		Part No.	Part Name & Description	Pcs	Remarks
B401(5)		XTB2+6G	SCREW	4	
B402(5)		XTB2+8GFZ	SCREW	1	
			SERVICE FIXTURES & TOOLS		
		VFJ8125H3F	VHS ALIGNMENT TAPE(PAL)	1	
		VFK0335	RETAINING RING REMOVER	1	
			(3mm/4mm)		
		VFK0329	POST ADJUSTMENT SCREWDRIVER	1	
		VFK0326	HEX WRENCH SET	1	
		VFK0132	BACK TENSION METER	1	
		VFK27	HEAD CLEANING STICK	1	
		MOR265	MORLYTONE GREASE	1	
		VFK0341	UPPER CYLINDER REMOVER	1	
		VFK0680	WHITE GREASE	1	
		VFK0851	CENTRE FIXING TOOL	1	
		VFK0330	FINE ADJUSTMENT GEAR DRIVER	1	

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MATSUSHITA ELECTRIC

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ORDER NO. VRD9304M117

Service Manual

Video Cassette Recorder

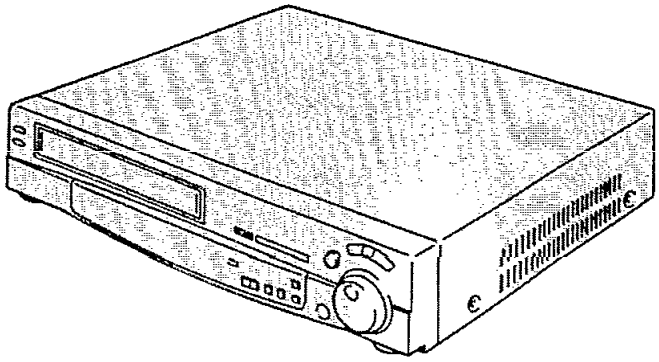
General Description
Adjustment Procedures
Block / Schematic Diagrams
Exploded Views / Parts List

Panasonic VHS PAL

Hi-Fi HQ

NV-HD100B/EB

K-MECHANISM



SPECIFICATIONS

ITEM	SPECIFICATION		ITEM	SPECIFICATION
POWER	SOURCE: 220−240V AC 50/60Hz		AUDIO	HEAD: 1 Stationary head (Normal Audio) 2 rotary heads (Hi-Fi 2CH)
	CONSUMPTION: 33 watts (NV-HD100B) 32 watts (NV-HD100EB)			INPUT: EURO AV Connector (21 pin) More than −6dBV (500mV), more than 10kΩ AUDIO IN Connector (Phono type) More than −10dBV (316mV), more than 47kΩ (NV-HD100EB) MICROPHONE JACK −70dBV
RECORDING SYSTEM	2 rotary heads, helical scanning system			OUTPUT: AUDIO OUT Connector (Phono type) −8dBV (400mV), Less than 1kΩ EURO AV Connector (21 pin) −6dBV (500mV), Less than 10kΩ
	PAL			TRACK: 1 track (Normal-mono only) 2 channels (Hi-Fi Sound-Stereo)
TV TUNER SYSTEM	NV-HD100B	UHF: CH21~CH69 (PAL I) 75Ω terminated	TAPE FORMAT	VHS Cassette tape (Tape width 12.7mm)
	NV-HD100EB	VHF I: CHE2~CHS3 VHF III: CHM1~CHE12 VHF H: CHU1~CHS41 (PAL/SECAM B) UHF: CH21~CH69 (PAL/SECAM G) 75Ω terminated	TAPE SPEED	SP: 23.39mm/s (PAL), 33.35mm/s (NTSC) LP: 11.695mm/s (PAL), 11.12mm/s (NTSC) Record/Playback Time: SP: 4 hours with 240min. type tape LP: 8 hours with 240min. type tape FF/REW Time: 2.5min. with 180min. type tape
RF OUT SYSTEM	NV-HD100B	UHF: CH36±4 (PAL I) 73±3dBμ, 75Ω unbalanced	DIMENSIONS	430(W)×96(H)×362(D) mm
	NV-HD100EB	UHF: CH36±4 (PAL/SECAM G) 70 $^{+3}_{-5}$dBμ, 75Ω unbalanced	WEIGHT	5.3kg
VIDEO	HEADS: 4 rotary heads 1 pair for SP recording, playback and trick play (L-R heads) 1 pair for LP recording, playback and trick play (L'-R' heads)		STANDARD ACCESSORIES	1 pc. DIN-RF Cable 1 pc. Infra-red Remote Controller 1 pc. Audio Cables 1 pc. AC Mains Lead 1 pc. Programme Sheet (NV-HD100EB)
	INPUT: EURO AV Connector (21 pin) 1.0Vp-p, 75Ω unbalanced VIDEO IN Connector (Phono type) 1.0Vp-p, 75Ω unbalanced (NV-HD100EB)			
	OUTPUT: EURO AV Connector (21 pin) 1.0Vp-p, 75Ω unbalanced VIDEO OUT Connector (Phono type) 1.0Vp-p, 75Ω unbalanced (NV-HD100EB)			

Weight and dimensions shown are approximate.
Specifications are subject to change without notice.

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INTRODUCTION

This service manual contains technical information which will allow service personnels to understand and service this model.

Section 1 presents you with technical know how for actual servicing and general information of features and controls, enabling you to become familiar with each function.

Section 2 presents to your mechanical and electrical adjustment information as well disassembly and replacement procedures.

In the case of very common information relating to other models like mechanical adjustments, please refer to the appropriate service manual.

Section 3 schematic diagrams which give you detailed information such as waveforms, voltage data, function e.t.c. ...

Section 4 contains exploded views and parts list.

Please place orders using the parts list and not the drawing reference numbers.

If the circuit is changed or modified, this information will be followed by supplementary service manual to be filed with original service manual.

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SECTION 1
GENERAL DESCRIPTIONS

1-1. SERVICE INFORMATION

1–1–1. K–MECHANISM INFORMATION

A. SERVICE POSITION

When servicing the K–Mechanism, the Mechanism can easily be fixed by standing the Mechanism up in the Main Frame as shown below to check easily.
In this position, the following services are possible.

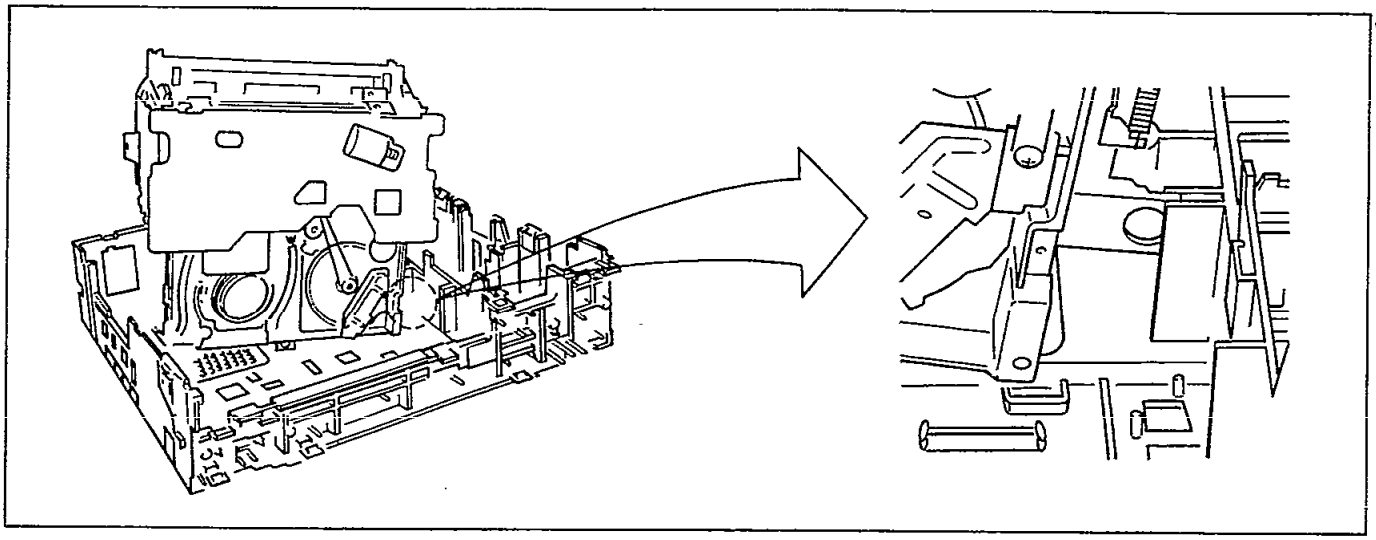


Fig. S1

A–1. CHECKING OF GEAR PHASE ALIGNMENT CONDITION

1) Remove the Mechanism Connection C.B.A.
2) Check gear phase visually.
(Refer to the Phase Alignment Condition of Mechanism described on the left side of Frame.)

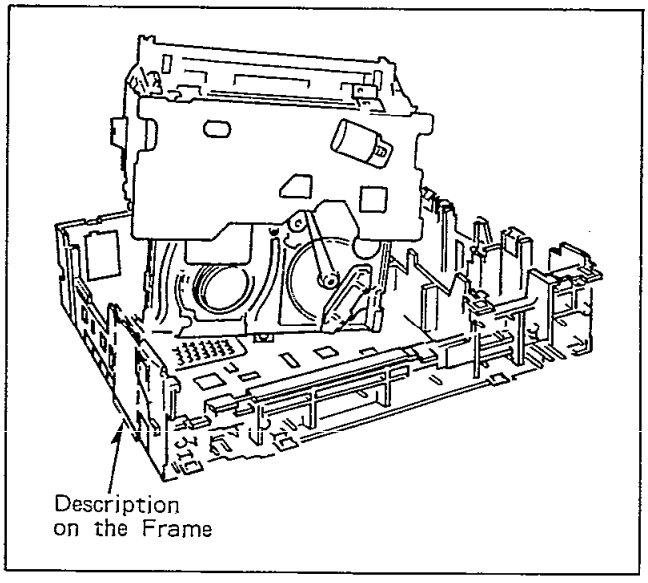


Fig. S2

A–2. Checking of Loading / Unloading Operation.

There are 3 methods for manual operation of loading/unloading operation as follows.

1. HAND OPERATION
   1) Remove the Mechanism Connection C.B.A.
   2) Turn the Worm Gear or the WORM WHEEL GEAR (Remove the Loading Motor Unit) manually.

2. BATTERY OPERATION
   1) Remove the Mechanism Connection C.B.A.
   2) Connect the Battery or Power Supply (+6V) to the Loading Motor terminals.

3. SERVICE INFORMATION DISPLAY OPERATION
   1) Set the Service Information Display mode. (Press the "EJECT" button while turning the "SHUTTLE RING" clockwise.)
   2) Momentarily make a short circuit as shown in Fig.S3.
   3) In the above condition,
      The Loading Motor rotates for Loading operation by pressing the "PLAY" button.
      The Loading Motor rotates for unloading operation by pressing the "STOP" button.

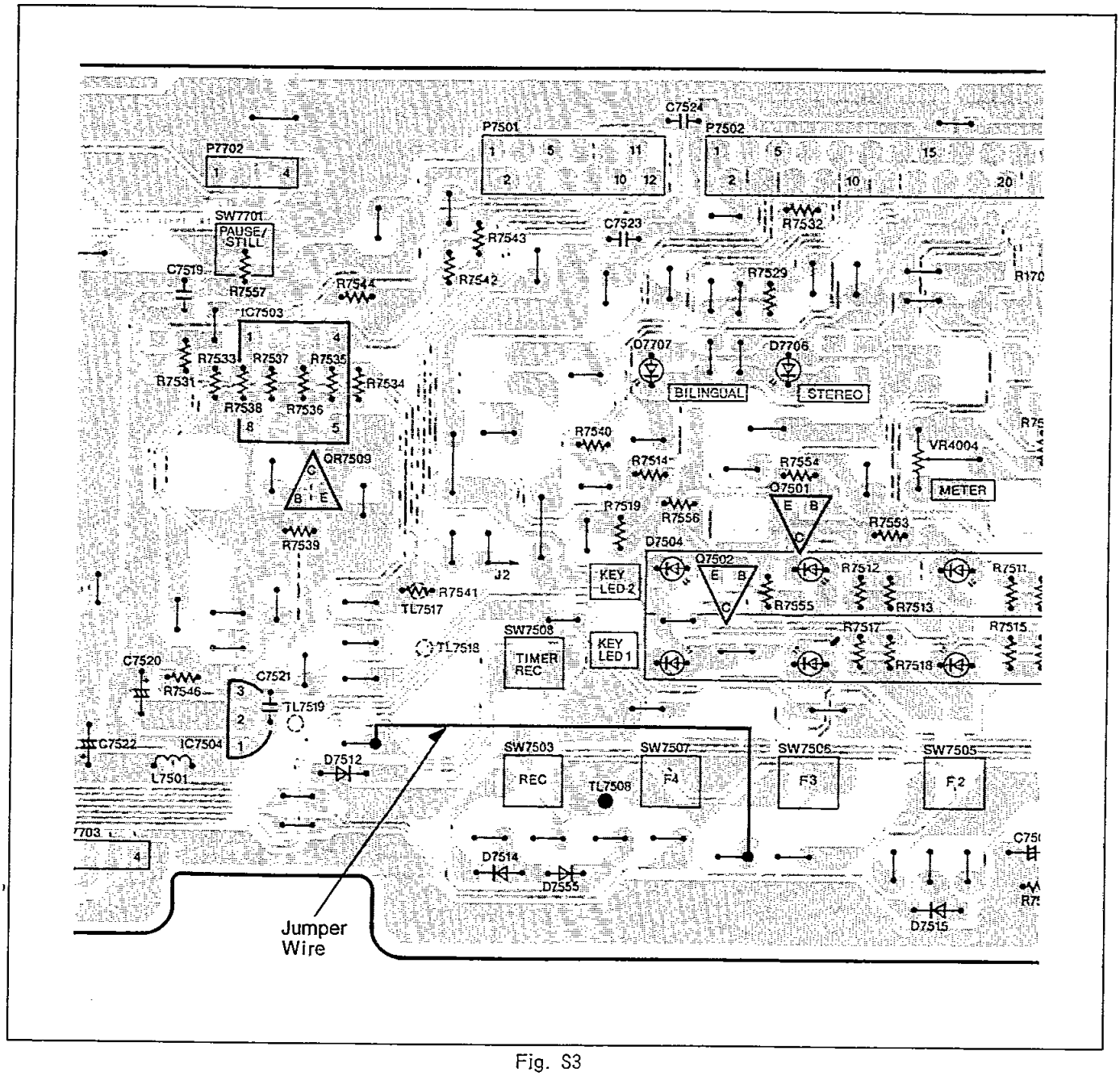


Fig. S3

Remark:
After checking, check the "SERVICE DISPLAY INFORMATION" mode for final confirmation of movement of Mechanism.

A–3. Checking of operation of Reel Gears.

1) Remove the Mechanism Connection C.B.A.
2) Set mechanism to "PLAY" position by manual operation of loading.
3) Turn the "Rotor Unit" to check movement of reel gears.

B. REPLACEMENT OF CYLINDER UNIT

The Cylinder Unit can be replaced easily by the following method.

1) Remove the Top Panel.
2) Remove the 3 screws of the .Cylinder Unit with a magnetized screw driver through the holes on the Bottom Plate as shown in Fig.S4.

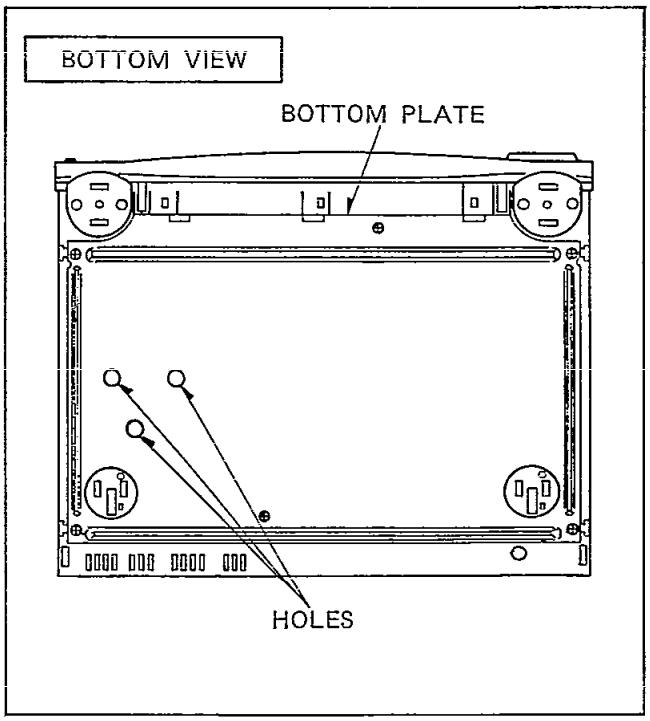


Fig. S4

C. ASSEMBLY OF CAPSTAN STATOR UNIT

When replacing the CAPSTAN STATOR UNIT, the CENTRE FIXING TOOL (VFK0851) must be used to fix the centre of CAPSTAN STATOR UNIT.

Method:

1) Place the CAPSTAN STATOR UNIT into position.
2) Loosely tighten the 3 screws.
3) Insert the CENTRE FIXING TOOL (VFK0851) as shown in Fig.S5.
4) Tighten the 3 screws.
5) Remove the CENTRE FIXING TOOL.

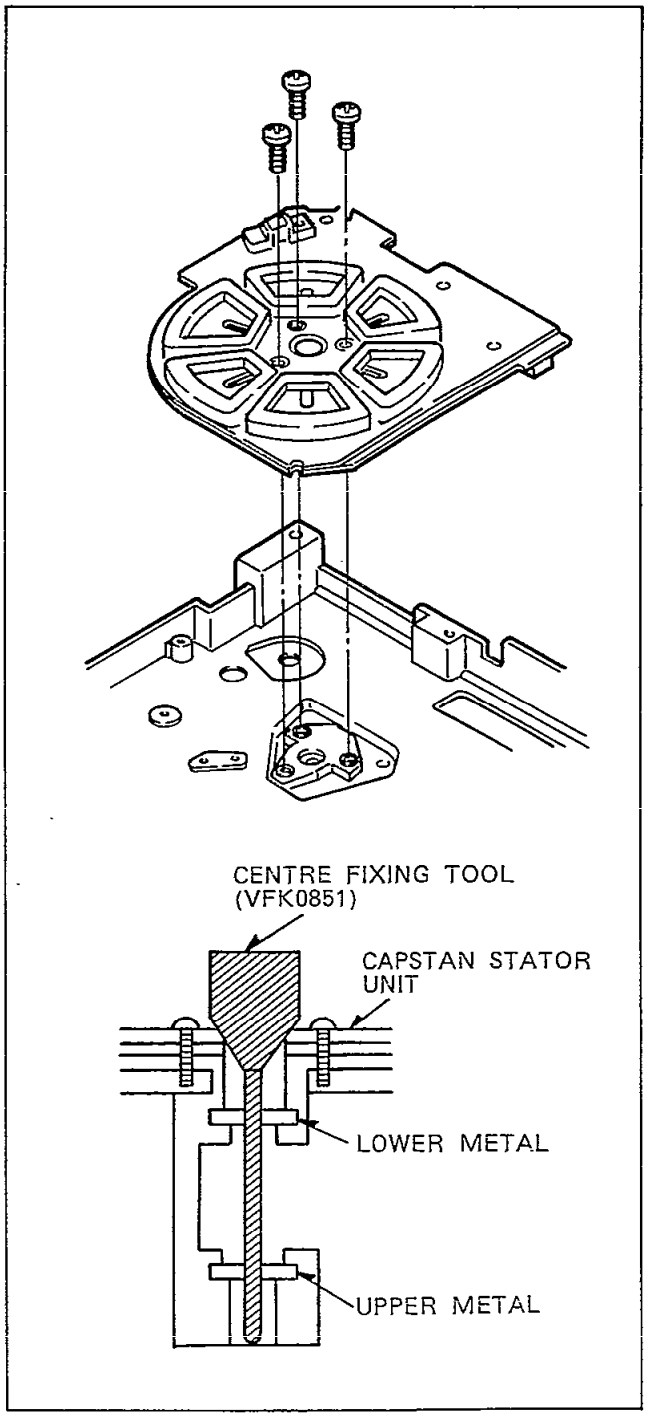


Fig. S5

D. EJECT OPERATION

The main cam gear rotates in the direction of the arrow. The projection (B) of the carriage connection gear engages with the recession (A) of the main cam gear. The carriage connection gear rotates in the direction of the arrow to perform the Eject operation.

<NOTE>
If the Eject operation is performed without the cassette carriage installed while repairing or making the mechanical phase alignment, the main cam gear will not engage with the carriage connection gear and will not rotate.
For performing the Eject operation with the cassette carriage not installed, it is necessary to rotate the carriage connection gear by hand in the direction of the arrow.

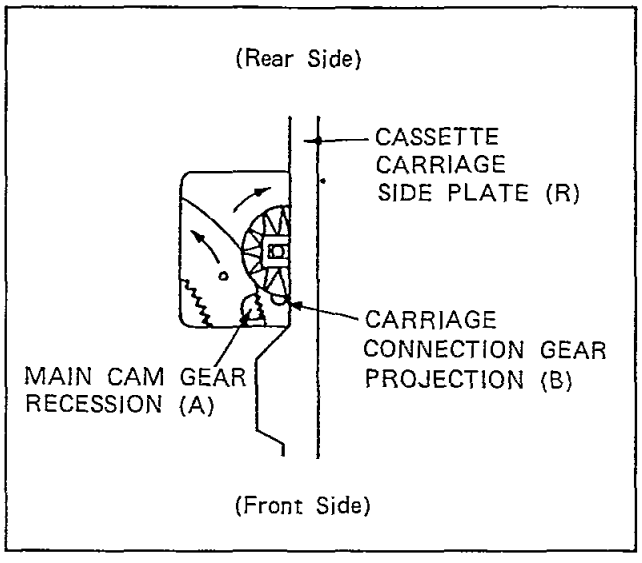


Fig. S6 Top View of Eject Operation

E. TAKE-UP PHOTO SENSOR OPERATION

Note the following matters for Take-up Photo Sensor Operation.

1) While servicing of the K-Mechanism, the unit will not operate properly if a strong light (ex, Fluorescent light, Spot light) falls on the Take-up Photo Sensor.
   In this case, cover the Take-up Photo Sensor to prevent the light from falling on it.
2) While servicing of the K-Mechanism with "Power On" and without cassette tape inserted, the Unit does not operate properly.

F. SERVICING OF POWER TR. C.B.A.

When removing the connector on the Power Tr. C.B.A., hold the P. C. Board by hand to prevent damage of the Power Tr.

1-1-2. REMOVAL OF THE CASSETTE TAPE.

If the electrical circuit is defective and the action of unloading and front unloading do not work properly, it is possible to remove the cassette manually. There are 2 methods of removing the cassette.

1. HAND OPERATION

1) Remove the bottom plate.
2) Turn the WORM GEAR to "A" arrow mark direction manually as shown in Fig.S7, moving the LOADING POST to the unloaded position.
3) Turn the CAPSTAN clockwise to take up the tape.
4) Turn the WORM GEAR again to eject the cassette.

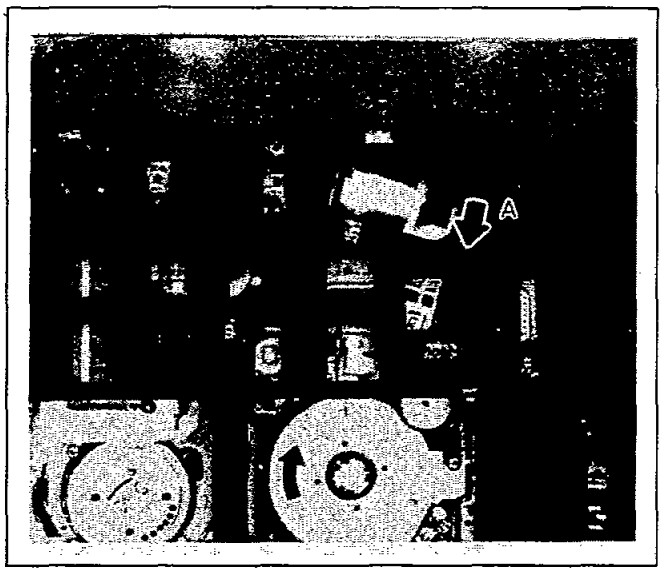


Fig. S7

2. BATTERY OPERATION

1) Connect the battery to P1503 as shown in Fig.S8.
2) After moving the LOADING POST to the unloaded position, disconnect the battery to stop the motor.
3) Turn the CAPSTAN to clockwise to take up the tape.
4) Reconnect the battery to eject the cassette.

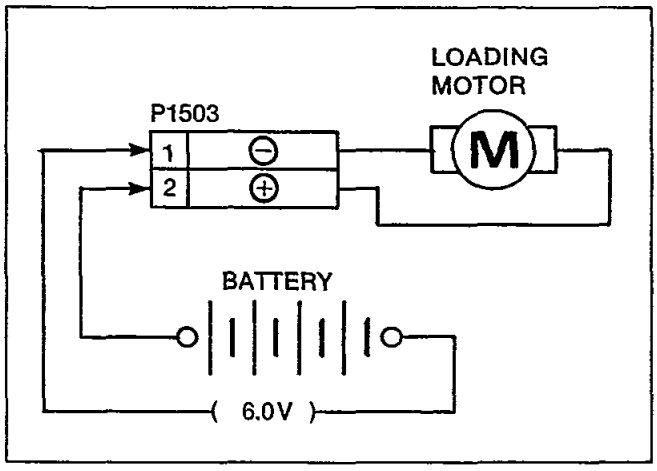


Fig. S8

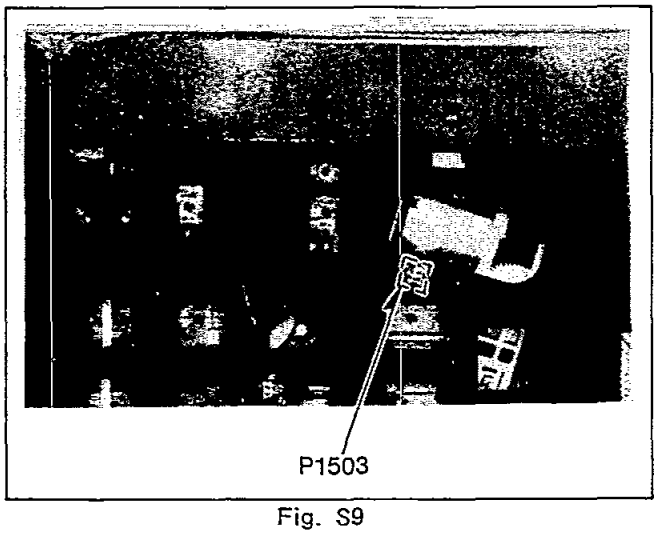


Fig. S9

1-1-3. INSTALLATION OF FLAT CARD CABLE

When installing of the Flat Card Cable to the connector, make sure the direction of the Flat Card Cable. The Insulation Sheet side is backside.

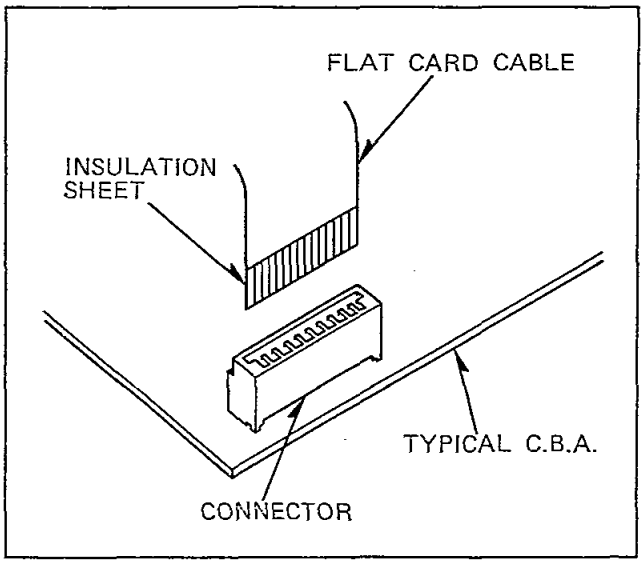


Fig. S10

1-1-4. INITIALIZATION OF CHANNEL MEMORY IC (IC7504/M6M80021P)

When replacing the channel memory IC (IC7504/M6M80021P), the memory IC should be initialized to keep formal specification.)

Note:

1) It should be performed before tuning.
2) During initialization or after initialization within 1 second, do not stop the power source. (Do not disconnect AC cord.)
3) Meaning of "INITIALIZATION" is to erase the "SKIP CH" In other words the number of channel position is the same as displayed channel.

Method:

1) Press the CH UP/DOWN Button so that the Channel indicator indicates "3".
2) Connect a jumper wire between Pin 54 and Pin 35 of IC7501 for more than 1 second.
3) Channel indication changes from "3" to "1".

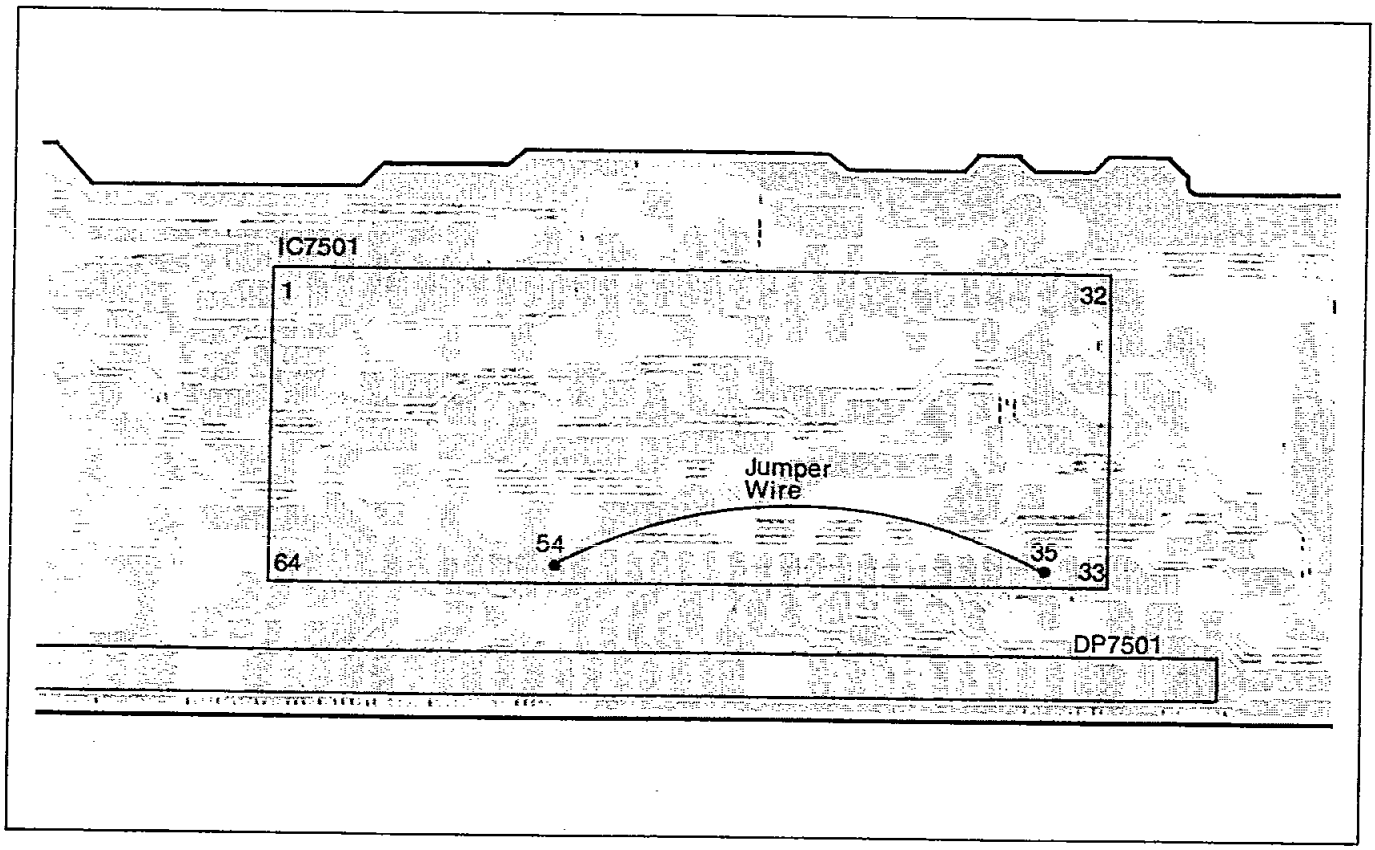


Fig. S11

1–1–5. HOW TO CHECK THE CRACKED CHIP PART

(1) Apply heat to the soldered portions of chip part using a soldering iron for about 2–3 seconds.
(2) If the chip part is faulty, it will fracture.

Caution:
Do not leave soldering iron on the PCB too long as damage may occur to the PCB or the chip parts.

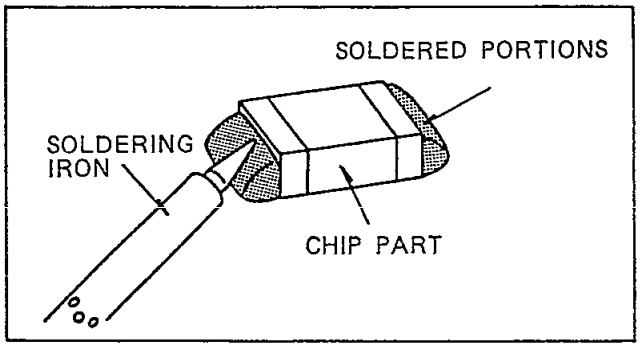


Fig. S12

Note:
Regarding intermittent faults.
The main causes of these faults are poor soldering and cracked chip parts.

1–1–6. HOW TO REPLACE THE CHIP PART

1)REMOVAL (RESISTOR, CAPACITOR, etc...)

(1) Presolder the one side of soldering portion for chip part and grasp the chip part by tweezers.
(2) Melt the presoldered portion. And then remove the chip part with a twisting motion while melting the soldering portion of another side quickly.

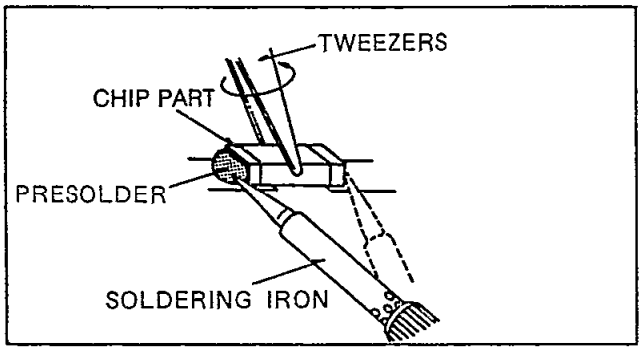


Fig. S13

2) REMOVAL (transistor, diode, etc...)

(1) Grasp the chip part with tweezers and melt the solder of one lead.

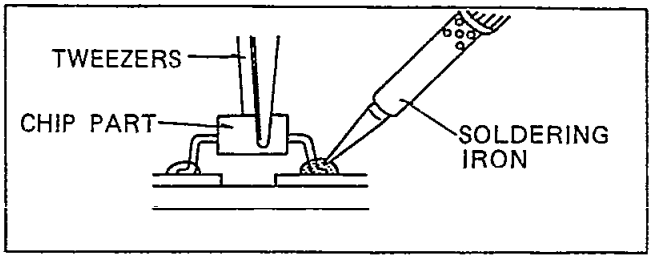


Fig. S14

(2) Lift the side of that lead upward.

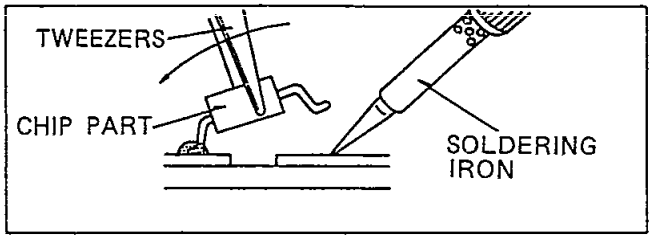


Fig. S15

Caution:
Do not lift the chip part too high as damage may occur to the PCB or the leads that are still soldered on the PCB.

(3) Simultaneously heat the solder of the two remaining leads and lift part to remove.

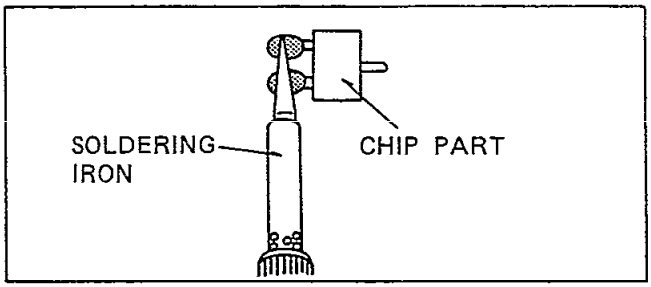


Fig. S16

3) INSTALLATION

(1) Presolder the one side of contact point on the circuit board.

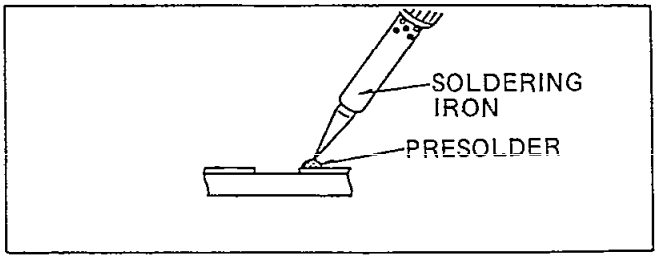


Fig. S17

(2) To install the chip part, hold in position using tweezers, apply heat to the pre-soldered portions using a fine tip soldering iron.
(3) Solder the other side of the chip part.
(4) Check your soldering and ensure no short circuits between pins.

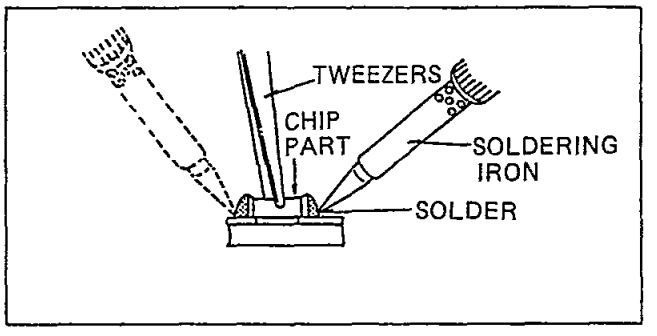


Fig. S18

1-1-7. HOW TO REMOVE THE FLAT-IC

(WITH HOT-AIR FLAT-IC DESOLDERING MACHINE)

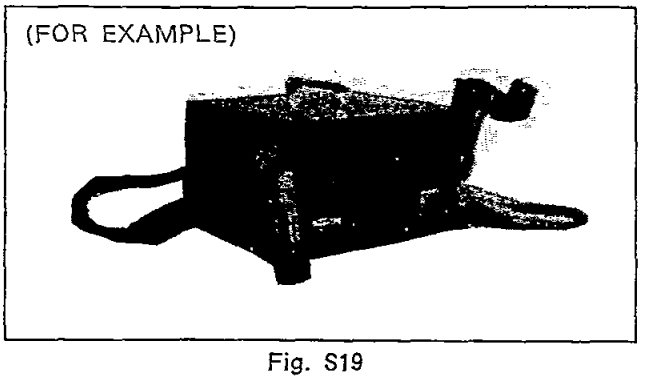


Fig. S19

(1) Prepare the HOT-AIR FLAT-IC DESOLDERING MACHINE. And then apply hot air to FLAT-IC about 5-8 seconds.
(2) Remove the FLAT-IC with tweezers while applying the hot air.

Caution:
Do not supply the hot air to the chip parts around the Flat-IC for long time as damage may occur to the chip parts around the Flat-IC.

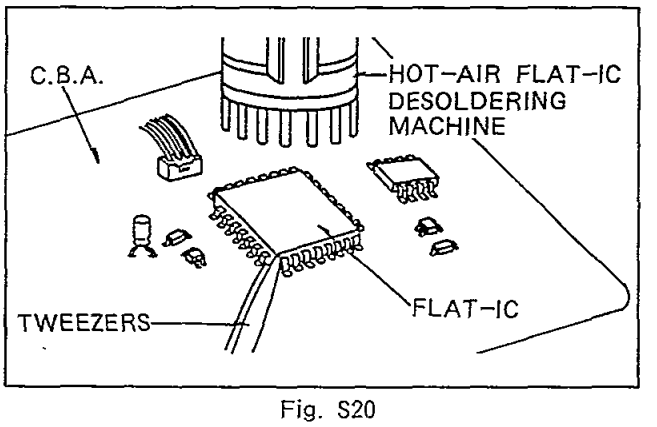


Fig. S20

(WITH SOLDERING IRON)

(1) Using solder braid remove the solder from all pins of the Flat-IC.
When you use the solder flux which is applied to all pins of the Flat-IC, you can remove it easily.

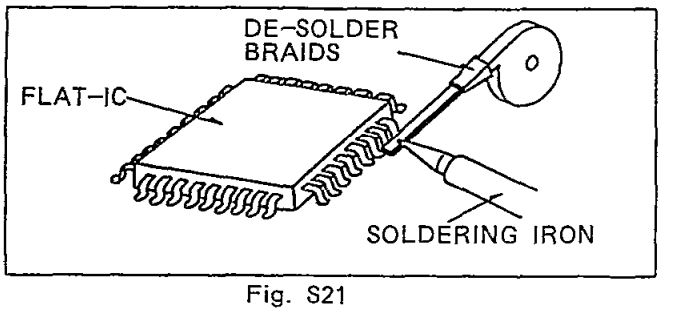


Fig. S21

(2) Lift each lead of the Flat-IC upward one by one using a sharp pin or non solder wire(iron wire), while heating the pins using a fine tip soldering iron or a hot air blower.

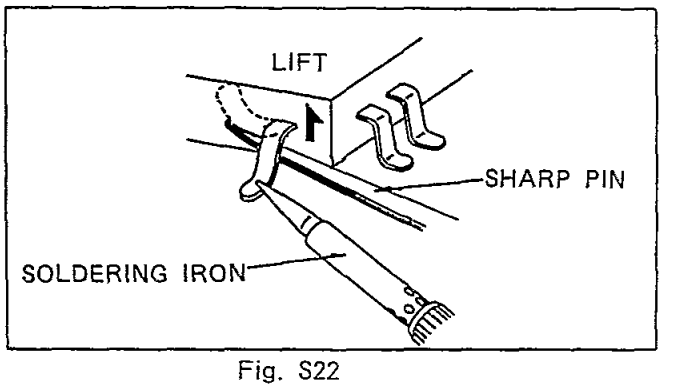


Fig. S22

(WITH IRON WIRE)

(1) Affix the wire to workbench or solid mounting point as shown in Fig.S23.
(2) Pull up wire as the solder melts so as to lift the IC lead from the PCB contact pad, while heating the pins using a fine tip soldering iron or hot air blower.

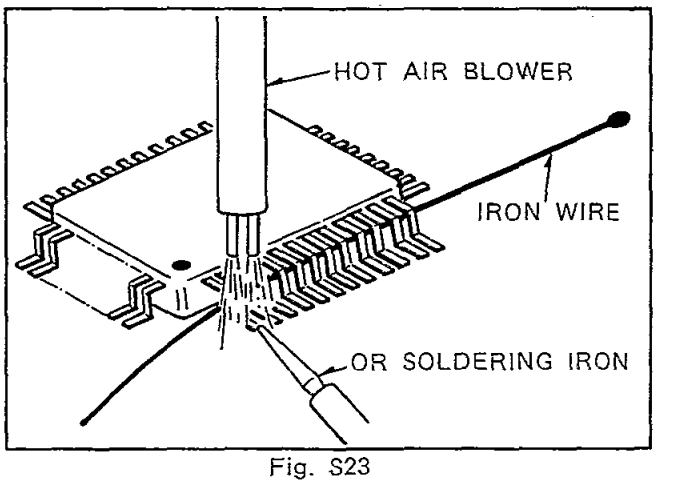


Fig. S23

Note:
When using a soldering iron care must be taken to ensure that the Flat IC is not being held by glue before it is the PCB may be damaged if force is used.

1-2. SERIAL CLOCK TRANSMISSION ERROR DISPLAY

If the Serial Clock is not transmitted from IC6001 to IC7501, "E9" is displayed as shown in Fig.T1. This indication will be displayed either during the Service Information Display mode or in normal mode.

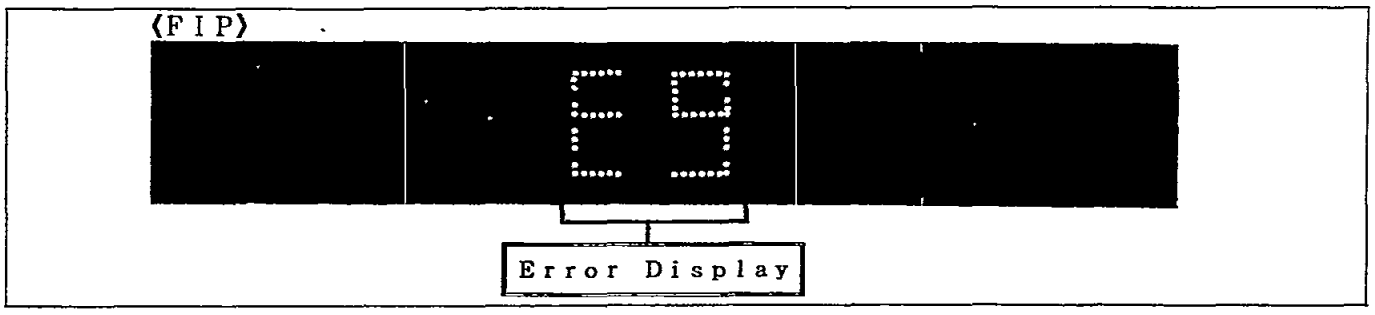


Fig. T1 Serial Data/Clock Transmission Error Display

1-3. SERVICE INFORMATION DISPLAY

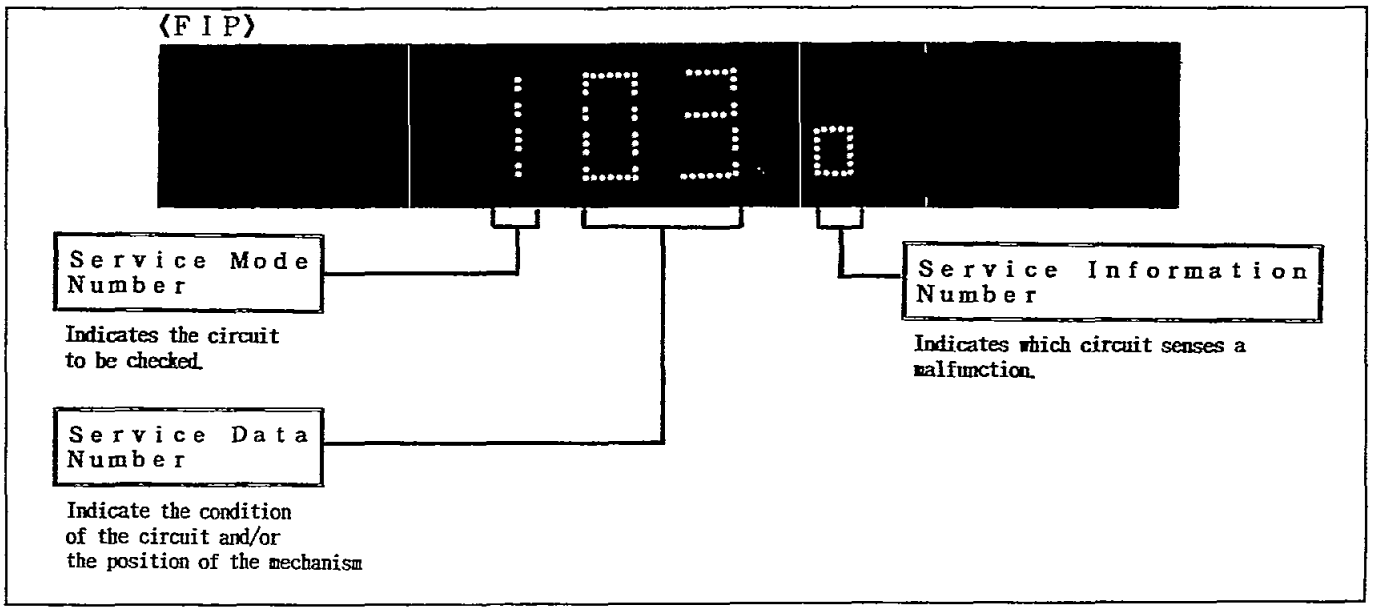

(F I P)
1 0 3 0
Service Mode Number
Indicates the circuit to be checked.
Service Information Number
Indicates which circuit senses a malfunction.
Service Data Number
Indicate the condition of the circuit and/or the position of the mechanism

Fig. D1 Service Information Display

1-3-1. Purpose of Service Information Display

This information aids trouble shooting by indicating the source of the malfunction. The service mode number & service data number are used by the technician during repair while the service information can be used by the consumer to diagnose malfunctions allowing the technician to provide a more accurate repair cost estimate and reduce repair time.

1-3-2. Turning on Service Information Display

There are two ways to turn on the Service Information Display.

(1) Turn the Shuttle Ring to FF then push the Eject button. The Service Information will be displayed for 1 minute.
(2) Connecting a jumper wire between TPSERV and TPGND will display the service information indefinitely.

In the Service Information Display, there are four digits divided into 3 functions.
The first digit indicates which other 6 service modes that the unit is Currently in.

MODE 1 : Check tape protection circuit
MODE 2 : Check tape transport mechanism
MODE 3 : Check mode switching operation
MODE 4 : Check control buttons
MODE 5 : Check capstan motor
MODE 6 : Check cylinder motor

The second and third digits are service data which indicate the condition of the circuit or mechanism being checked.

The fourth digit is the service Information display. It is to be used by the consumer to help determine the source of a malfunction. The service information display operates independently of the service modes and stores the fault indication in memory for as long as AC power is supplied.

1-3-3. Use of Service Modes

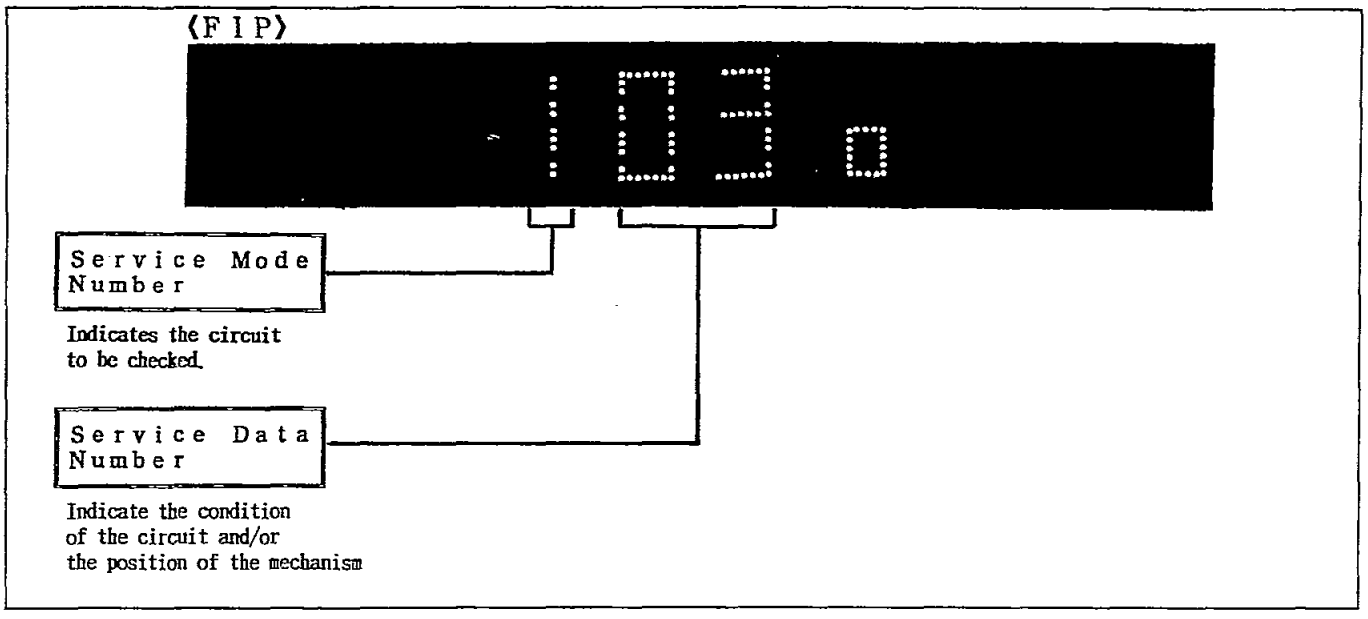

(F I P)
Service Mode Number
Indicates the circuit to be checked.
Service Data Number
Indicate the condition of the circuit and/or the position of the mechanism

Fig. D2. Service Mode Number and Service Data Number on S.I.D.

(1) Turn on Service Information Display.
(2) To change Service Modes turn the shuttle ring to FF then push the Eject button.
(3) Mode 1 : Checks that the Sensor LED, Supply & Take-up Sensor circuits check the circuits by blocking the light from the Sensor LED to either or both Supply & Take-up Sensors.
When the light is blocked to both sensors, "00" should be indicated on the service data number.
When the light is blocked to the supply sensor, "01" should be indicated.

(4) Mode 2 : Checks the mode switch circuit while indicating mechanism position.
Service Data Numbers indicate the position of the mode switch and there by the mechanism position.

(5) Mode 3 : Checks that mode switch circuit operations have been completed.
Service Data Number should indicate "00" after each mechanism operation is completed.

(6) Mode 4 : Checks the operation circuit.
Indicates if IC6001 receives the operating commands from the mode buttons and/or remote controller.

(7) Mode 5 : Checks the capstan motor circuit.
Indicates if the IC6001 has received the command to rotate the capstan motor.

(8) Mode 6 : Checks the cylinder motor circuit.
IC6001 has received the command to rotate the cylinder motor.

<NOTE>
Refer to Fig.D5 for details of Service Data Number.

1-3-4. Service Information Number

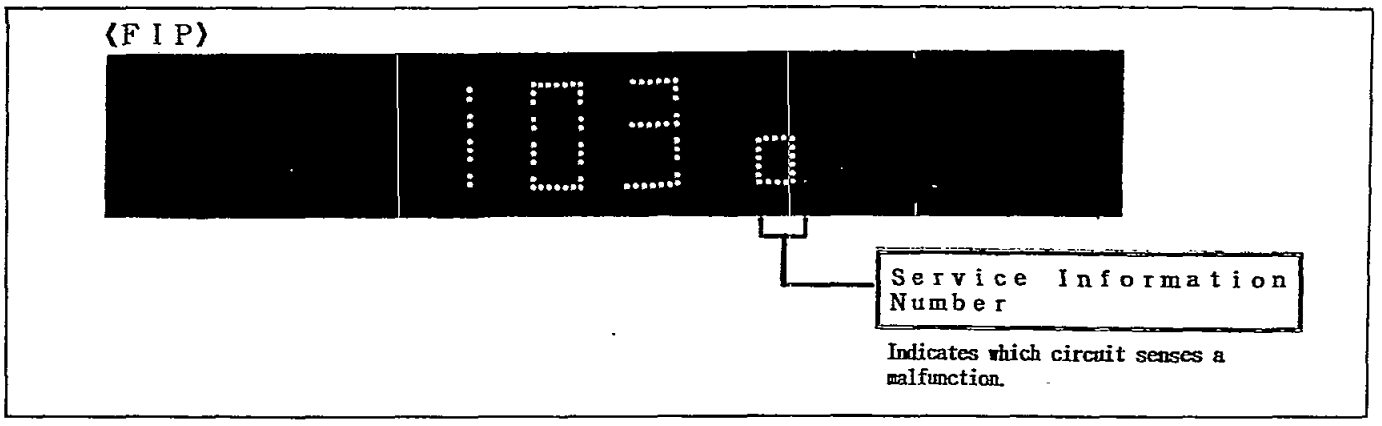


Fig. D3 Service Information Number on S.I.D.

Refer to Fig.D4 for details of Service Information Number.

Note:
The Service Information Number display is independent of the service mode display.
The Service Information Number will be stored as long as AC power is supplied.
If a second error occurs, the most current error will be displayed.

Service Information Number	Malfunction
0	Normal (No problem)
1	Cylinder stop
2	Tape reel stop
3	Stop at position other than 4 or 6
4	Stop during unloading
5	Falty capstan rotation
6	Stop during Cassette-In/Eject operation

Fig. D4 Service Information

Service mode Number	Note for checking Service Data Numbers	Service Data Numbers	Indication	Remarks
1	———	00	No light detected at either sensor	Tape not required
		01	Tape Begining. Light to Supply Photo Sensor is blocked.	
		02	Tape End. Light to Take-up Photo Sensor is blocked.	
		03	Light detected at both sensors.	
2	———	00	EJECT	Tape Reuired *1 : STOP3 ; The Pinch Roller is on the capstan motor shaft. *2 : STOP ; The Pinch Roller is off the capstan motor shaft. Refer to Fig. D7 to Check mechanism Position and timing.
		01	Cassette-down	
		02	REV, REV SLOW	
		03	Loading/Unloading	
		04	PLAY/REC, STILL/PAUSE, CUE, FWD SLOW, STOP3 *1	
		05	STOP*2	
		06	FF/REW	
		07	Intermediate position	
3	Disregard service data displayed until mechanism operation is completed. Then the display should indicate "00".	00	Any display other than "00" indicates a fault in the mode switch circuit or system.	Tape Required.
4	Display only when the operating button is pressed.	Refer to Fig. D6		Tape not required.
5	Left digit only, disregard Right digit display.	Left Digit / Right Digit	8, 9, u, A, –, n, L, and no display indicate that the Capstan motor "PLAY" command recived by IC6001.	Tape required. If a symbol other than those listed is displayed, a malfunction in that circuit is indicated.
	Right digit only, disregard left digit display.	Left Digit / Right Digit	1, 2, 3, 4, 5, 6, 7, indicate that the Capstan motor CUE, FF, Forward slow" commands received by IC6001.	
	Right digit only, disregard left digit display.	Left Digit / Right Digit	8, 9, u, A, –, n, L, and no display indicate that the Capstan motor Reverse, Rew, Reverse Slow commands received by IC6001.	
6	Left digit only, disregard Right digit display.	Left Digit / Right Digit	1, 3, 5, 7, 9, A, n and no display indicate that the cylinder motor "ON" command received by IC6001.	Tape required. If a symbol other than those listed is displayed, a malfunction in that circuit is indicated.

Fig. D5 Service Data Display and Indication

SERVICE DATA NUMBERS	MODE BUTTONS	SERVICE DATA NUMBERS	MODE BUTTONS
3n	OPERATE	54	RESET
01	EJECT	5	ZERO STOP
09	AUDIO DUB	-0	INPUT SELECT
A3	INSERT	49,4U	INDEX
-9	PAL/MESECAM	A1,A2	TRACKING(+,-)/V-LOCK
—	CHECK/PROG.	9	REPEAT
34 OR 35	∧∨, +−	8	SKIP
—	NEXT/SP/LP	—	TAPE SELECT
—	SLEEP/SHIFT	—	PROG.
A4	TIMER REC	—	NEXT
08	REC	—	RECORDING SP/LP
—	CLOCK SET	—	CANCEL
—	TUNER PRESET	10	SU(1)
80	PAUSE/STILL	11	MO(2)
0U	PLAY	12	TU(3)
00	STOP	13	WE(4)
0-,0n	JOG DIAL (FRAME ADV, REVERSE ADV)	14	TH(5)
03,02	SHUTTLE RING (FF, REW)	15	FR(6)
—	TV/VTR	16	SA(7)
—	SCANNER ON/OFF	17	SU~SA(8)
—	TRANSMIT	18	MO~SA(9)
0	SEARCH	19	MO~FR(0)
8L	+ (REMOTE CONTROLLER)	3A	-/—
8	- (REMOTE CONTROLLER)		
—	DISPLAY		

Fig. D6 Service Data Display for Service mode 4

1-3-5. Timing Chart from Mode SW to System control IC6001

System control IC6001 senses the mechanism position though the Mode SW.
Fig.D7 shows the timing for Service Mode Number 2.

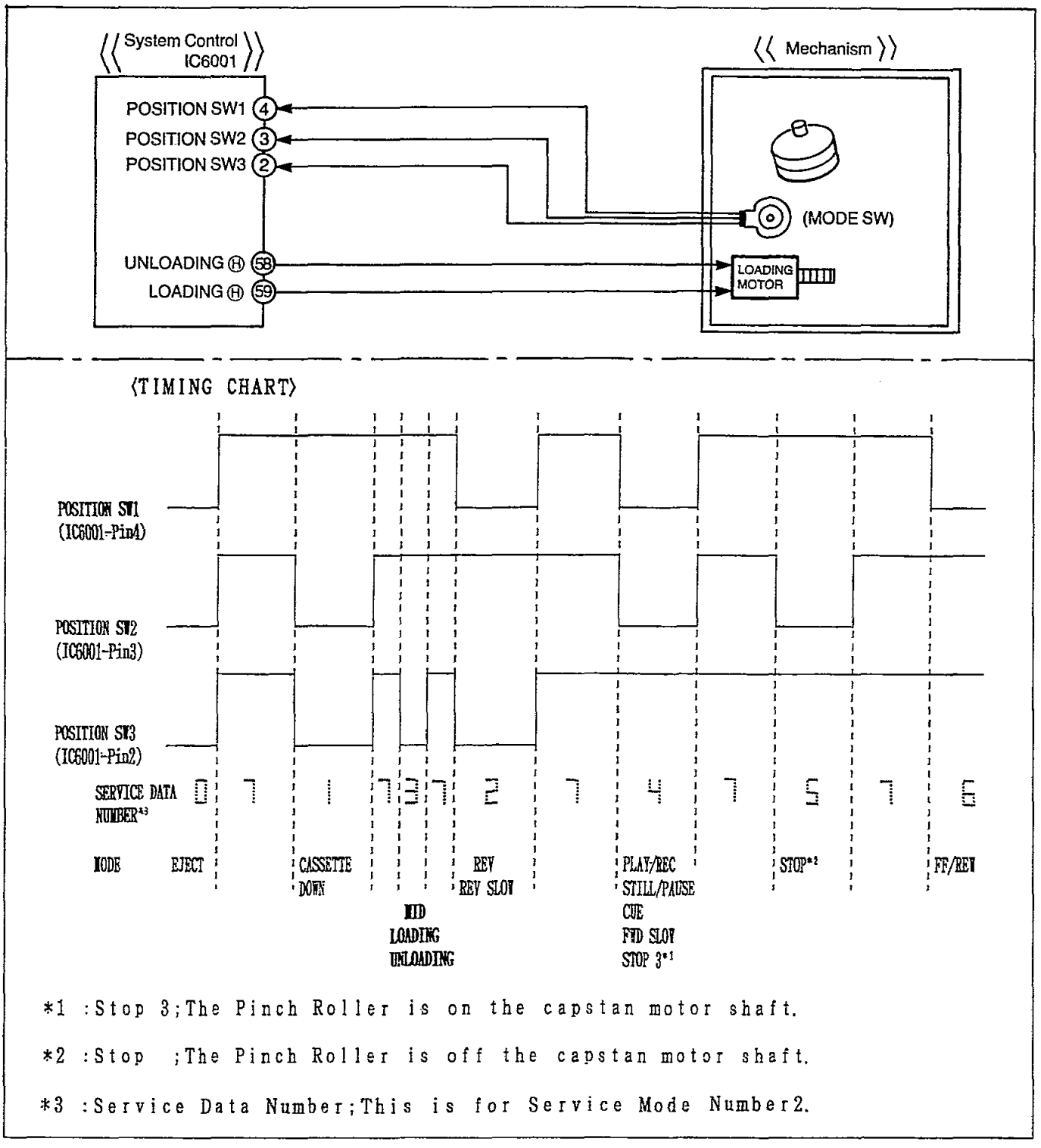
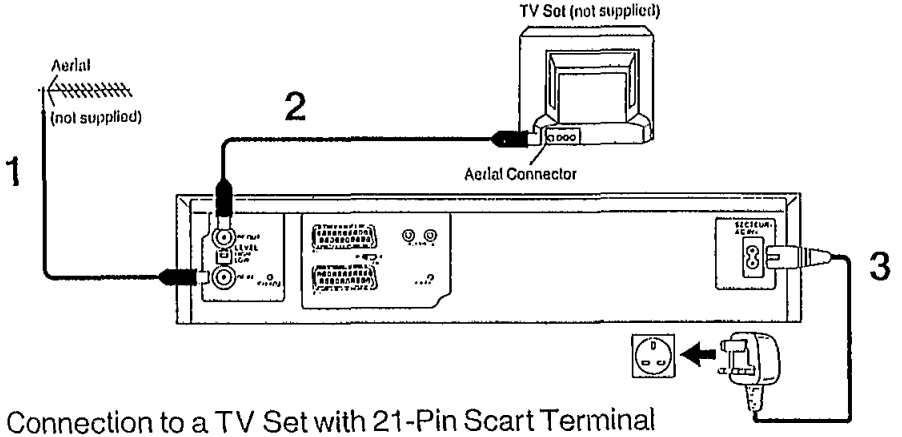


Fig. D7 Timing Chart of Mode SW

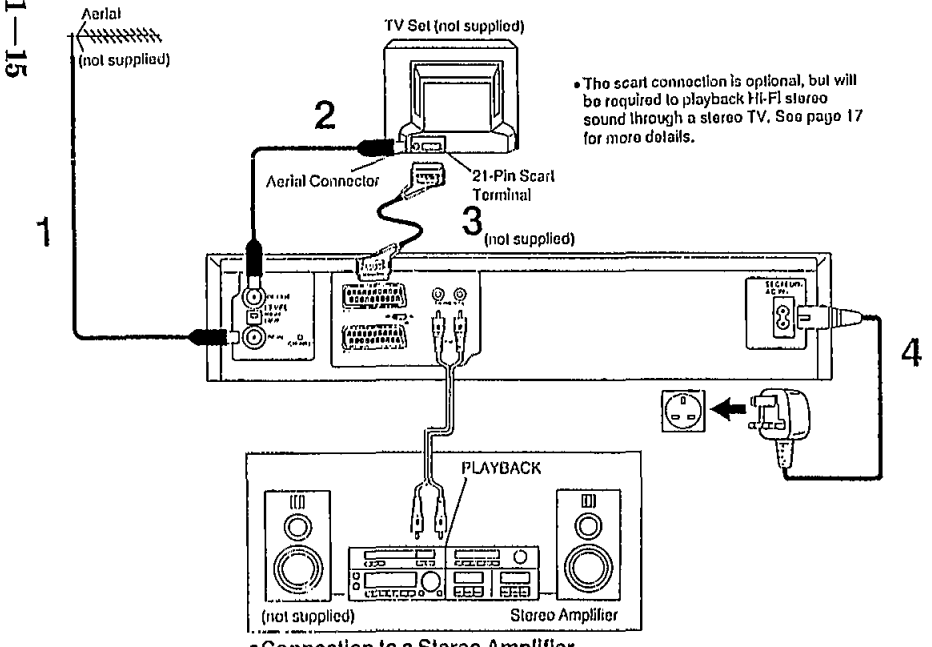
Connections

Basic Connections

The following connections are required to record and play back the VTR through a TV set:



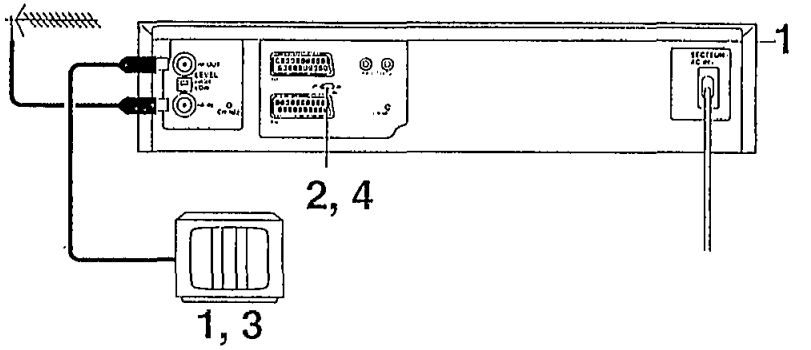
Connection to a TV Set with 21-Pin Scart Terminal



• The scart connection is optional, but will be required to playback Hi-Fi stereo sound through a stereo TV. See page 17 for more details.

• Connection to a Stereo Amplifier

Tuning the TV to your VTR



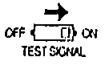
It is possible to view the video picture on your TV in the same way that you watch TV broadcasts.

If you have connected the VTR to the TV through the 21-pin scart terminal, then you do not need to follow the procedure mentioned below.

Operations

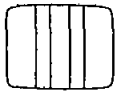
1 — Turn on the TV and VTR.

2 — To generate a test pattern, set TEST SIGNAL to ON.



3 — Set the TV to an unused position which you wish to use for your video playback.

• Tune the TV until the test pattern appears on the screen.



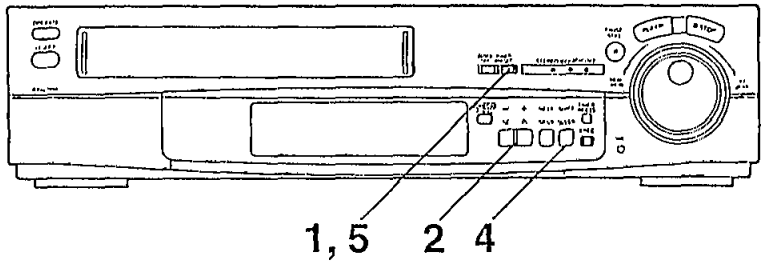
4 — Set TEST SIGNAL to OFF.

Note:

The test signal is transmitted on channel 36 of the UK broadcasting channels. If you are encountering interference from another broadcast on the video channel, you may readjust to a free channel by using the CH ADJ. screw which is located on the rear of the VTR.

Please note that if the CH ADJ. screw is used then you will have to retune your TV to the test signal as in item 2 to 4 above.

Storing TV Broadcasts into your VTR

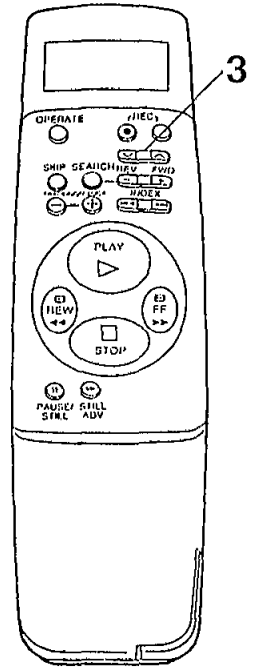


Introduction

The VTR is fitted with its own tuner (just like a normal TV set) and can be pre-set to receive up to 99 TV broadcast* stations.

Preparation

- Confirm that the TV is on and the VTR viewing channel is selected.
- Turn on the VTR and select the programme position except A1 and A2.
- Install the batteries in the remote controller. See page 20.



Operations	Display Symbols	
1 TUNER PRESET	P0: 1	Keep TUNER PRESET pressed until a bleep sound is heard.
2 − +	P0:	Search for the TV Station. • If the required station is not displayed, press + or − again.
3	P0: 1	Select programme position.
4 SHIFT	P0: 1	Memorize the broadcast station. • To memorize the other stations, repeat steps 2 to 4.
5 TUNER PRESET		Press TUNER PRESET.

Note:
- While tuning, your video may lock onto several weak stations from distant transmitters. Should this occur press + or − again until a strong station is received.

Channel Plan

It is recommended that you set the programme positions on the VTR to match the remote controller setting, so when using the Video Plus+ programming the correct broadcast station is recorded.
The table below shows the correct setting:

Programme position	TV station
1	BBC1
2	BBC2
3	ITV
4	Channel 4
A1, A2, 5~20	*Satellite input

*Satellite input
To receive satellite stations, the satellite receiver must be connected to the VTR and programme position must be set depending on the type of the connection made.
- A1: When the satellite receiver is connected to the AV1 socket
- A2: When the satellite receiver is connected to the Audio/Video input sockets (AV2)
- 5~20: When the satellite receiver is connected by means of the RF coaxial cable. Follow the tuning procedure on page 10.

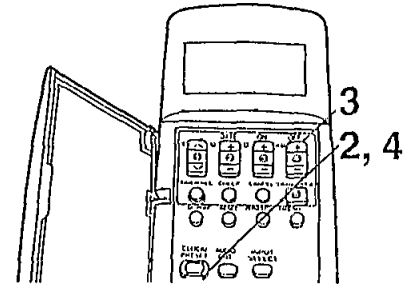
Tuning Procedure Using the VTR Only

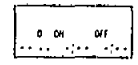
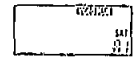
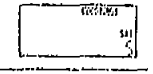
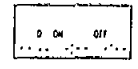
Stations can be tuned in by following the steps given below.
1 Press TUNER PRESET until a bleep sound is heard.
2 Search for the TV station by pressing + or −, and then press NEXT.
3 Select programme position by using + or −.
4 Press SHIFT to memorize the broadcast station.
- To memorize the other stations, press NEXT and then repeat steps 2 to 4.

5 Press TUNER PRESET.

Setting the Satellite Position on the Remote Controller

The remote controller must be set to the selected programme position for the satellite receiver, in order to record satellite stations using Video Plus+ programming.
Note:
A satellite receiver cannot be operated using this unit's remote controller.
Preparation
Set the clock of the remote controller first. See page 12.



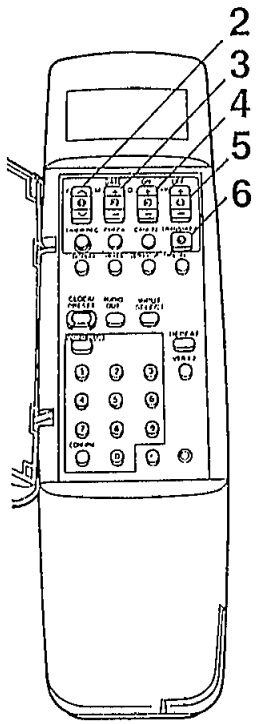
Operations	Display Symbols
1 Open the door of the remote controller.	
2 Keep CLOCK/PRESET pressed for 2 seconds or more and then press it again.	
3 Select A1, A2 or 5~20.	
4 Press CLOCK/PRESET.	
5 Close the door of the remote controller.	

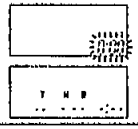
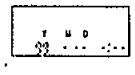
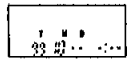
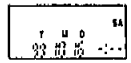
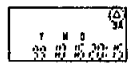
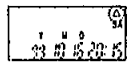
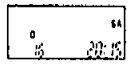
Setting the Clock of the VTR

By setting the time on the remote controller's clock and then by transmitting this setting to the VTR, the clocks on both the remote controller and VTR display the same time. The built-in digital clock employs the 24-hour system.

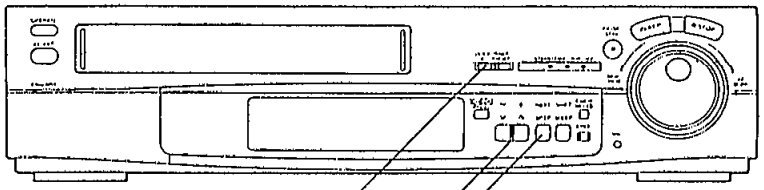
Preparation
- Turn on the VTR.
- Install the batteries in the remote controller. See page 20.

For Example:
Date; 16th, October, 1999
Time; 20:15



Operations	Display Symbols	
1		Open the door of the remote controller.
2 Y		Set Year "99".
3 DATE M		Set Month "10".
4 ON D		Set Date "16".
5 OFF H/M		Set Time "20:15". •When it is kept pressed, the indication changes in 30-minute steps.
6 TRANSMIT		Press TRANSMIT.
7		Close the door of the remote controller.

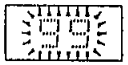
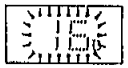
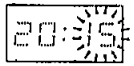
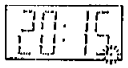
Note:
To change the previous clock setting, press CLOCK/PRESET for at least 2 seconds. The previous clock setting will be displayed. Then follow steps 2 to 7 above.



In addition to setting the VTR clock from the remote controller, it can also be set directly from the VTR. 1, 3 2

Preparation
Turn on the VTR.

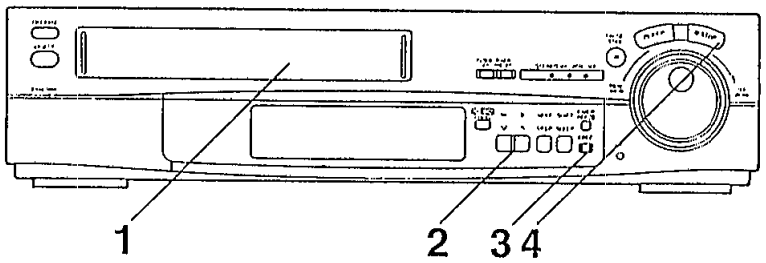
For Example:
Date; 16th, October, 1999
Time; 20:15

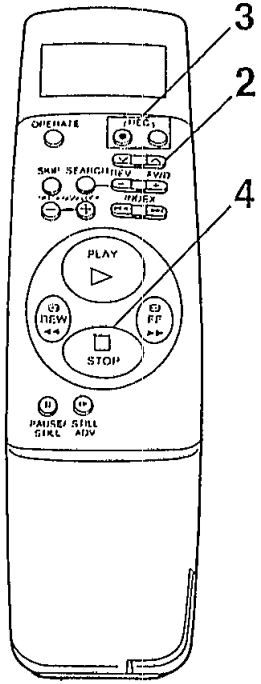
Operations	Display Symbols	
1 CLOCK SET		Keep CLOCK SET pressed until a bleep sound is heard.
2 Set each item by pressing + or – and NEXT.		
– +		Set Year "99".
		Set Month "10".
		Set Date "16".
NEXT		Set Hour "20".
		Set Minute "15". •There is no need to press NEXT.
3 CLOCK SET		Press CLOCK SET. •The clock will start.

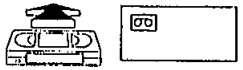
Time Reset Function
If the clock is less than two minutes slow or fast, it can easily be reset to the proper time.
For example: Resetting the clock to 12:00.00.
1 Press CLOCK SET at any time between 11:58.00 and 12:01.59 until the bleep sound is heard.
2 Press CLOCK SET again as soon as you hear the 12:00.00 time signal.

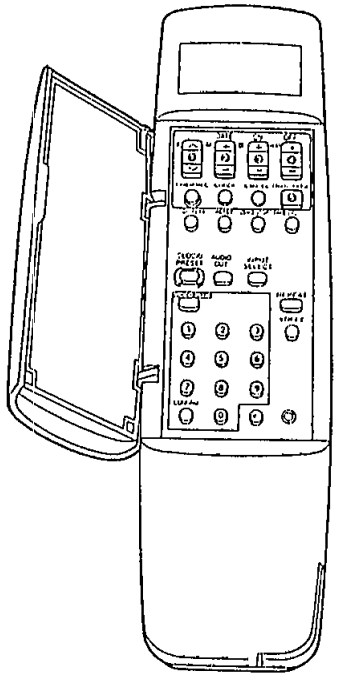
Note:
The clock operates for at least 60 minutes by its backup system in the event of power failure.

On-the-spot Recording





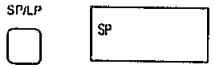
Operations	Display Symbols	
1		Insert a cassette tape. •If it has already been inserted, press OPERATE to turn the VTR on.
2		Select TV station.
3		Start recording.
4		Stop recording.



Notes:
- When a video cassette with a broken off tab is inserted, the "⊡" indication will flash to indicate that recording is not possible.
- The recording pause mode will be automatically released after 5 minutes, and be back to the stop mode.

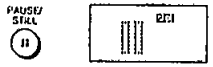
To select the Desired Tape Speed

Press SP/LP before recording.



To Interrupt Recording

Press PAUSE/STILL during recording.
Press again to continue recording.



To record One TV Programme while Viewing Another Programme

1 Refer to the on-the-spot recording operations steps 1 to 3.

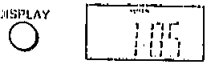
2 Select the TV programme on your TV set you wish to view at the present time.

To display the Approximate Remaining Tape Time

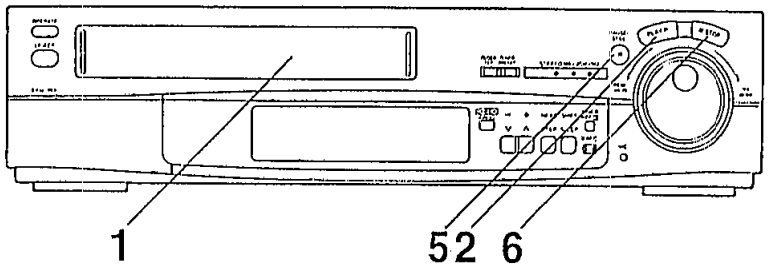
1 Press TAPE SEL to select the corresponding cassette tape length.

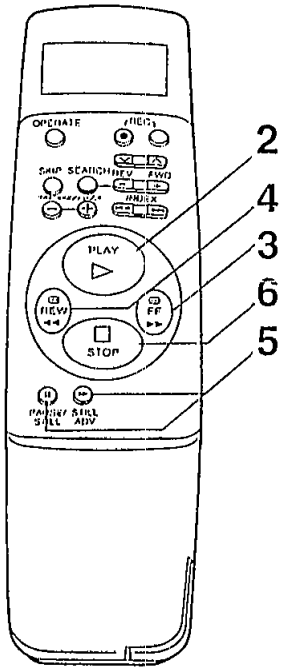
E195: For E30, -60, -80, -120, -180 and -195 tapes.
E240: For E240 tape.
E260: For E260 tape.

2 Press DISPLAY.

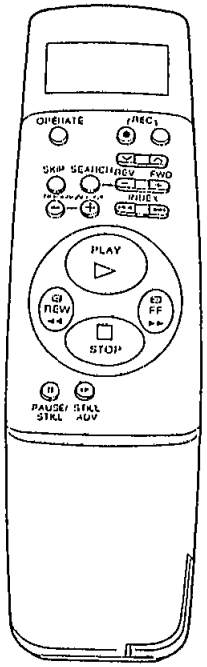


Playback





Operations	Display Symbols	
1		Insert a recorded cassette tape.
2 PLAY		Start viewing the picture.
3 FF		Search forward by tapping FF. • To change back to normal playback, press PLAY.
4 REW		Search backward by tapping REW. • To change back to normal playback, press PLAY.
5 PAUSE/STILL → STILL ADV		View a still picture. • To advance one frame of the still picture, press STILL ADV. • To continue the normal playback, press PLAY or PAUSE/STILL.
6 STOP		Stop viewing the picture.



Note:
Cue, review or slow playback will be automatically released after 10 minutes, and still playback after 5 minutes.

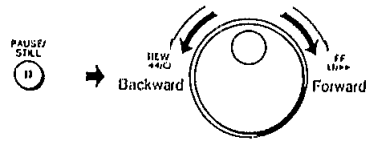
Other Playback Functions

To change the Playback Speed

Using Shuttle Ring:

1 Press PAUSE/STILL.

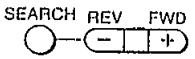
2 Rotate Shuttle Ring.



Using Remote Controller:

1 Press SEARCH.

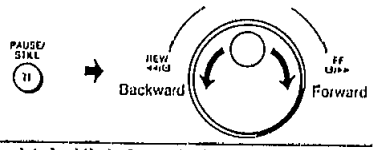
2 Press FWD or REV repeatedly.
FWD: To increase the playback speed forward
REV: To increase the playback speed backward



To locate the Desired Picture exactly

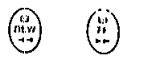
1 Press PAUSE/STILL.

2 Turn Jog Dial.

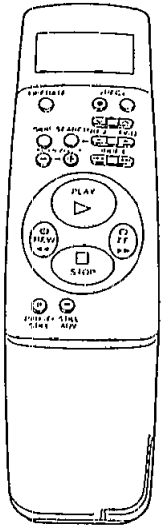


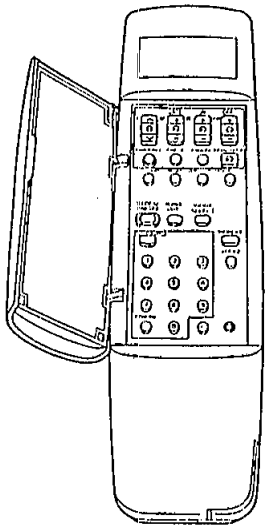
To obtain High Speed Picture during Fast Forward or Rewind

Keep FF pressed during fast forward.
Keep REW pressed during rewind.



• The same operation can also be performed by turning the Shuttle Ring.





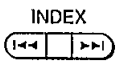
To Skip Scene

Press SKIP during playback.

- The following 30 seconds will be skipped.
- Each press gives a 30 seconds time span up to 4 minutes.

To find the Beginning of Each Recording

For example:
Searching for the 2nd recorded segment in the forward direction.
Press INDEX ▶▶I twice.



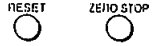
- After finding the specific recorded segment, playback starts automatically.
- For the reverse direction, press INDEX I◀◀.
- Up to 20 programmes can be searched for in both directions.
- When the incorrect numerical data has been entered, press STOP and enter the correct data.

Recording Index Signals
Index signals are recorded in following cases.
WRITE indicator appears on the Display.
- When a recording is started by pressing REC.
- When REC is pressed during recording.
- When timer recording is activated.

To return to a Specified Scene

1 Press RESET to set the counter to 0:00.00.

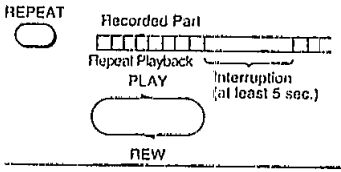
2 After playback, press ZERO STOP in the stop mode.



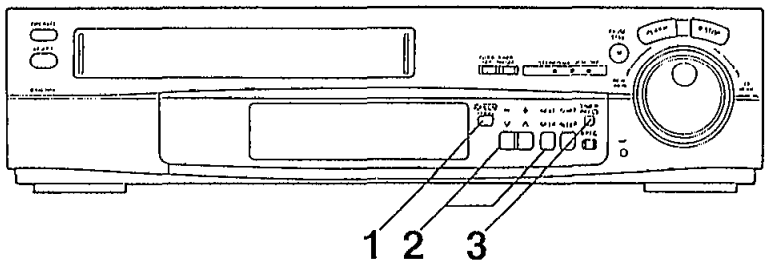
- The tape will be rewound or fast forwarded to 0:00.00.

To playback a Recorded Part repeatedly

Press REPEAT in the stop mode.



Timer Recording



Introduction

Up to 8 timer programmes can be recorded up to one month in advance by setting the timer, including daily and weekly programmes.

Preparation

Insert a cassette tape with an intact erasure prevention tab.

For Example:

Timer programme number;	1
Programme position (channel);	2
Date;	27th, October
Starting time;	20:02
Ending time;	21:30
(present date; 16th October)	

Operations	Display Symbols	
1 CHECK/PROG	PROG 1	Select Timer programme number "1".
2 Set each item by pressing + or − and NEXT.		
− +		Set Programme position (channel) "2".
		Set Date "27". •For daily and weekly recording, see next page.
		Set Starting time (hour) "20".
↓		Set Starting time (minute) "02".
NEXT		Set Ending time (hour) "21".
		Set Ending time (minute) "30". •There is no need to press NEXT.
3 TIMER REC		To activate timer recording, press TIMER REC.

Setting for Daily and Weekly Timer Recording

In the Date setting step, press − repeatedly until the desired day(days) is displayed.

Daily recording
From Sunday to Saturday — SU MO TU WE TH FR SA

From Monday to Saturday — MO TU WE TH FR SA

From Monday to Friday — MO TU WE TH FR

Weekly recording
For example, Sunday — SU

Timer Recording from External Signal Source

If Timer Recording is performed by a unit connected to the AV1 socket or the Audio/Video input sockets, select the A1 or A2 indicator for the programme position.
A1: Through the AV1 socket
A2: Through the Audio/Video input sockets (AV2)

Selecting the Desired Tape Speed

After step 2, press NEXT and select SP or LP by pressing + or −.

Setting other Programmes in Succession

Repeat steps 1 and 2.

Checking a Timer Programme

Select the timer programme number to be checked by pressing CHECK/PROG.

Cancelling a Timer Programme

1 Release from the standby mode by pressing TIMER REC.

2 Select the timer programme number to be canceled by pressing CHECK/PROG.

3 Press + and − simultaneously for more than 3 seconds.

Note:
If a timer recording is not performed to the end (due to insufficient tape or cancellation by the user), the programmed timer recording data will be cancelled from the memory by 4 a.m. two days later.
However, if the Timer Record Function is activated at that time, the programmed timer recording data will be cancelled at 4 a.m. the next day.

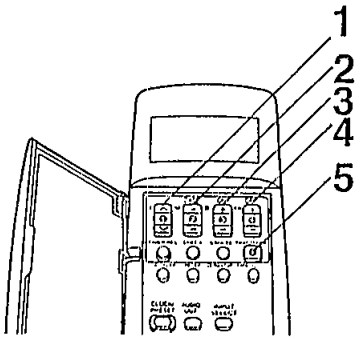
Optional Function

PDC (Programme Delivery Control)

The Programme Delivery Control (PDC) is a very convenient system which assures that the TV programmes you have programmed for timer recording will be recorded exactly from beginning to end, even if the actual broadcasting time differs from the scheduled time due to delayed start or extension of the programme duration. Also, if a programme is interrupted and, for example, some special news are inserted, the recording will also be interrupted automatically and resumed when the programme continues.

- This model is not equipped with PDC function. The PDC function becomes operative when the VTR is equipped with the optional PDC decoder. Consult your authorized video dealer.
- If the VTR is equipped with the PDC decoder, the PDC indicator lights when the correct PDC signals are transmitted from the broadcasting station.
- When the unit is set for programmed recording, the PDC indicator lights whether or not PDC signals are transmitted. This indicates that the recording has been programmed with PDC. To programme a recording without PDC, press SHIFT; this cancels the PDC function and turns off the PDC indicator.
- Since PDC signals are received when a recording is programmed using PDC, the power of the unit's tuner section is turned on and the programmed broadcasting is received. When a multiple number of programmes have been programmed for timer recording, all of the broadcasts concerned will be received in sequence. These broadcast pictures can be seen on the video playback channel and AV out (no sound).
- If the actual broadcasting times of timer recordings overlap (regardless of whether they are PDC-controlled), the recording that starts first has always priority, and the recording of the later beginning programme will start only after the first timer recording has finished.
- When the PDC signal drops out because the broadcast signal is weak, or when a broadcasting station does not transmit a regular PDC signal, the timer recording will be performed in the normal mode (without PDC) even if it was programmed for PDC.
  In this case, even if the timer recording is performed, whatever has been programmed will not be cancelled at that particular time but at 4 a.m. on the following day.

Using the Remote Controller



For Example:

Programme position (channel):	2
Date:	27th, October
Starting time:	20:02
Ending time:	21:30

Preparation

- Insert a cassette tape with an intact erasure prevention tab.
- Open the door of the remote controller.

Operations	Display Symbols
1 Set Programme position (channel) "2".	
2 Set Date "27".	
3 Set Starting time "20:02".	
• When it is kept pressed, the indication changes in 30-minute steps.	
4 Set Ending time "21:30".	
5 Press TRANSMIT.	
6 Close the door of the remote controller.	

Daily Timer Recording

For this timer function, several groups of days can be selected.

Ⓐ Daily recording from Sunday to Saturday

Ⓑ Daily recording from Monday to Saturday

Ⓒ Daily recording from Monday to Friday

In step 3, select the desired days by pressing DATE ↔.
For Example, Ⓐ

Weekly Timer Recording

In step 3, select the desired day by pressing DATE ↔.
For example, SU (Sunday)

Timer Recording from External Signal Source

If Timer Recording is performed by a unit connected to the AV1 socket or the Audio/Video input sockets, select the A1 or A2 indicator in step 1 for the programme position.
A1: Through the AV1 socket
A2: Through the Audio/Video input sockets (AV2)

Checking a Timer Programme

- The VTR must be turned on, or the timer recording indicator "⏲" is lit.

Press CHECK repeatedly until the desired timer programme number is displayed.

CHECK

Cancelling a Timer Programme

1 Press CHECK repeatedly until the desired timer programme number is displayed.

CHECK

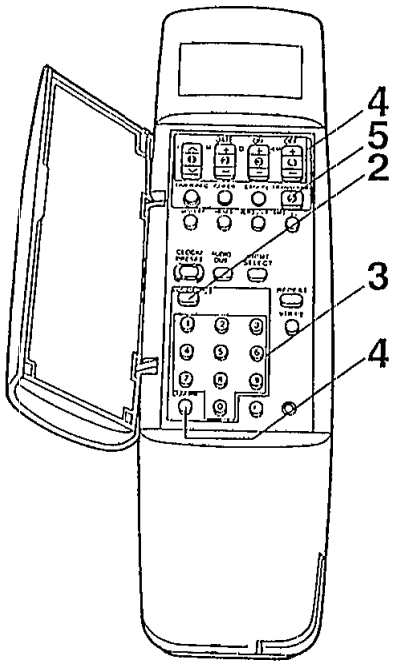
2 Press CANCEL.

CANCEL

Note:
The tape speed (SP/LP) cannot be set with the remote controller. Before programming, select SP or LP on the VTR.

Programming the Video Plus+ PlusCode

Programming is now easier than ever: simply enter the PlusCode provided in the programme schedule column carried by newspapers and magazines.
PlusCodes are numbers which are assigned to each programme listed in the TV programme schedule carried in newspapers and TV guides. When these codes are entered and TRANSMIT is pressed, the codes are converted into the actual programming and sent to the VTR.



[1] **Note:**
A satellite receiver cannot be operated using this unit's remote controller.

Preparation

- Insert a cassette tape with an intact erasure prevention tab.
- Set the programme positions on both the VTR and remote controller as shown on page 11.

Operations	Display Symbols
1 Open the door of the remote controller.	
2 Press VIDEO PLUS.	
3 Enter a PlusCode. Example: 920216	
4 Press CONFIRM to check that the code corresponds to the right programme.	
• To make any corrections, use buttons ❶~❾.	
5 Press TRANSMIT.	
6 Close the door of the remote controller.	

Notes:
- When the PlusCode is used for programming, the recording time may be slightly longer than the actual programme time.
- Repeat steps 2 to 4 if "Err" appears on the remote controller.
- When programming two or more programmes, repeat steps 2 to 5 after pressing TRANSMIT.
- The procedures for checking and canceling whatever has been programmed are the same as for remote control programming.
- The tape speed (SP/LP) cannot be set with the remote controller. Before programming, select SP or LP on the VTR.

Editing

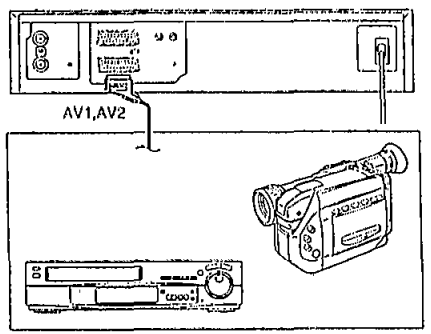
Assembly Editing

This function can be used to make up an edited tape from other recordings or video sources.

A new scene can be added to the end of a previous one.

Preparation

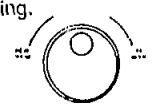
- Connect a movie camera or another VTR to this VTR as shown.
- Insert a recorded cassette tape with an intact erasure prevention tab.
- Select the video source required by pressing INPUT SELECT to set A1 or A2.
  A1: Through AV1 socket
  A2: Through AV2 socket
- Set EDIT to ON.



Operations

1 Press PAUSE/STILL.

2 Search for the end of the previous recording.



3 Set for the new recording by pressing REC.

4 Start the new recording by pressing PAUSE/STILL again.

Notes:

- The new sound will be recorded on both the normal and Hi-Fi sound tracks, only monaural sound recording is possible on the normal sound track.
- Set EDIT to OFF for ordinary use of the VTR.

Synchronized Editing

It is possible to synchronize the playback start and stop of the Movie Camera with the recording start and stop of this VTR.

- Connect a Movie Camera to this VTR with Synchro Connection Cord (optional). (Type VW-K1E)

1 Put the VTR in the recording pause mode by pressing REC and PAUSE/STILL.

2 Put the Movie Camera in the still playback mode at the point where you want to start editing.

3 Press PAUSE/STILL on the VTR.
- The Movie Camera changes over to the playback mode and the dubbing will start automatically.

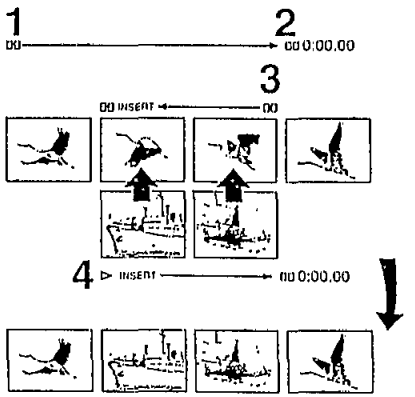
Synchronized Editing between the VTRs

When editing from another VTR equipped with Synchro Edit Socket, synchronized start and stop of both VTRs can be activated from this VTR.

The operation is the same as described for synchronized editing from a Movie Camera.

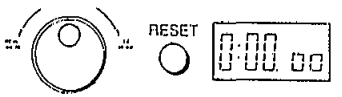
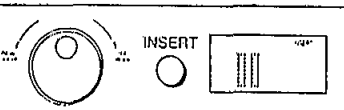
Insert Editing

This editing method allows a new recorded segment to be inserted into an existing recording to replace an existing segment of the same length.



Preparation

- Insert a recorded cassette with an intact erasure prevention tab.
- Select the video source required by pressing INPUT SELECT to set A1 or A2.
- Set EDIT to ON.

Operations	Display Symbols	
1		Press PAUSE/STILL.
2		Search for the Edit out (ending) point, and set the counter to 0:00.00 by pressing RESET.
3		Search for the Edit in (starting) point, and press INSERT. • If you want to replace the sound too, press AUDIO DUB as well.
4		Start insert editing by pressing PAUSE/STILL. • The insert editing will finish when the counter reaches 0:00.00.

Note:

Insert Editing cannot be used on blank sections of a tape. In this case, use Assembly Editing first.

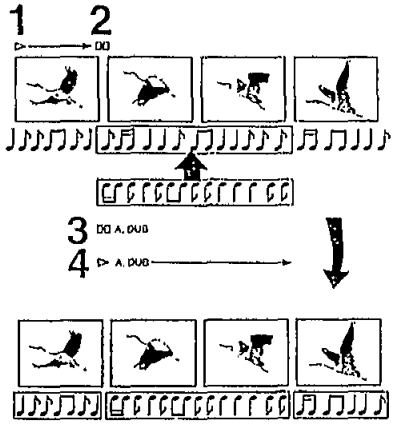
The new sound will be recorded on the Hi-Fi sound track. If AUDIO DUB selected, the new sound will also be recorded on the normal sound track.
Only monaural sound recording is possible on the normal sound tracks.

Audio Dubbing

Note that the original sound on the "normal" (mono) sound track will be completely erased during audio dubbing.

Preparation

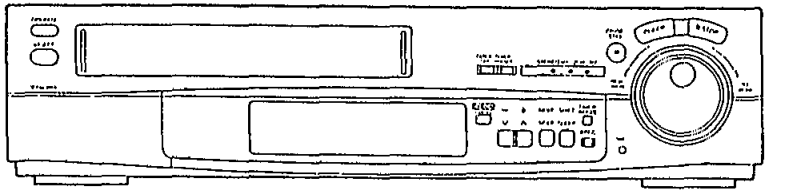
- Insert a recorded cassette with an intact erasure prevention tab.
- Select the video source required by pressing INPUT SELECT to set A1 or A2.



Operations		Display Symbols	
1	PLAY		Search for the starting point for audio dubbing.
2	PAUSE/STILL		Press PAUSE/STILL at the starting point.
3	AUDIO DUB		Set for audio dubbing by pressing AUDIO DUB.
4	PAUSE/STILL		Start recording the new sound by pressing PAUSE/STILL. • Stop recording by pressing STOP.

Note:
The new sound will be recorded on the normal sound track of the tape, and the original sound will remain on the Hi-Fi sound track. Only monaural sound recording is possible on the normal sound track.

To hear the new sound, select the normal sound track by pressing AUDIO OUT.
To hear the new sound and original sound mixed together, set HI-FI/NORMAL MIX to ON.



Playback of NTSC Tape

Tapes recorded in the NTSC system can be played back with this VTR via a PAL system TV set.

- NTSC is the TV broadcasting system used in U.S.A., Japan, and some other countries.
  PAL is another TV broadcasting system used in U.K., Germany and many other parts of the world.
  This VTR will not replay or record tapes on the SECAM broadcasting system.
  NTSC 4.43 is a modified version of the PAL broadcasting system to allow most UK TV's to reproduce a colour picture when an NTSC tape is replayed on this VTR. However due to the system change, the picture may shrink, roll or not reproduce colour on some televisions.

Note:
Because the NTSC 4.43 is not a true PAL signal, NTSC recordings cannot be dubbed onto another VTR.

Automatic VTR Functions

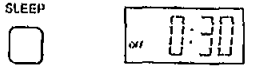
Automatic Playback
When a cassette without an erasure prevention tab is inserted, the VTR starts playback automatically.

VTR-off Playback
When the VTR is off, an inserted cassette can be played back by pressing PLAY.

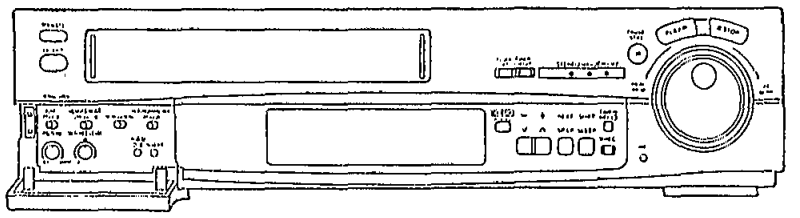
Automatic Rewinding
When the tape reaches its end during recording (except for timer recording) or playback, it will automatically be rewound to the beginning.

Automatic Switching Off and Ejection
When the VTR is switched off, an inserted cassette can be ejected simply by pressing EJECT. The VTR will eject the cassette and automatically turn itself off again.

Automatic VTR Off Time Setting
Press SLEEP for the desired time.



- Each press gives a 30 minutes time span up to 9 hours.
- To cancel the setting time, press SLEEP repeatedly to set 0:00.



The NICAM Broadcast System

NICAM is a 2 Channel sound broadcast system to provide either a high quality stereo sound track or 2 independent MONO sound tracks, M1 and M2.

NICAM programmes are always accompanied by standard sound broadcasts and you can select the desired sound with NICAM/MONO (when recording) or with AUDIO OUT (when playback).

The NICAM digital stereo sound can only be recorded on the Hi-Fi audio track.

When a stereo, dual-soundtrack or mono NICAM programme is being received, the indicators are lit to inform you of the type of broadcast.

Reception of a NICAM Stereo Broadcast

When the STEREO indicator is lit, set NICAM/MONO to NICAM to be able to record on the Hi-Fi sound track in stereo.
The Audio cable must also be connected to a stereo TV in order to hear the NICAM sound in stereo.

Reception of a NICAM Dual-Sound Broadcast

When the M1 and M2 indicators are lit, set NICAM/MONO to NICAM if you want to record both channels on the Hi-Fi sound track. M1 is the left-hand channel and M2 is the right-hand channel.

Reception of a NICAM Monaural Broadcast

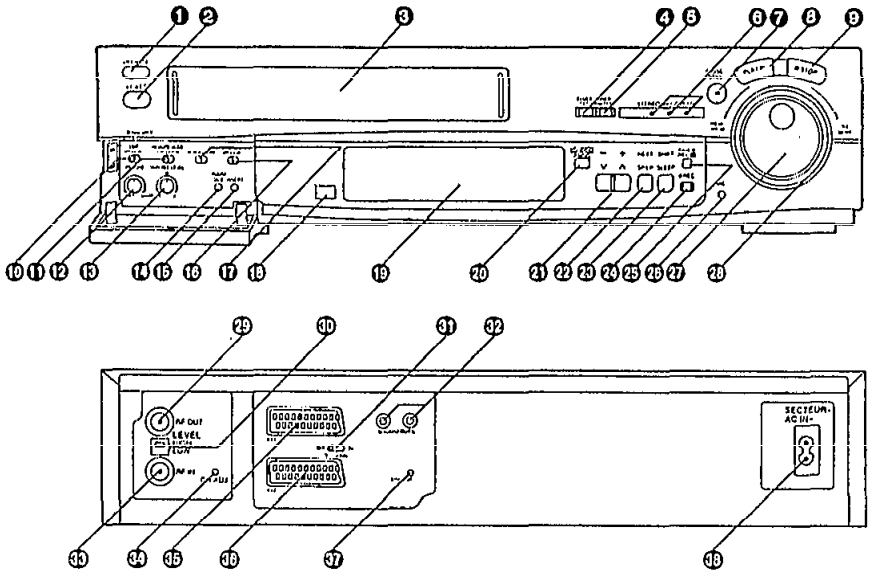
When a NICAM monaural broadcast is being received, only the M1 indicator is lit. To hear such a signal on both channels and to record it on both channels of the Hi-Fi track, set NICAM/MONO to NICAM.

- To record the regular sound (ordinary normal sound) on the FM audio tracks when a NICAM programme is received, set NICAM/MONO to MONO.

Important Note for the NICAM System:
When this VTR tuner is switched on, it will automatically switch to a NICAM broadcast, if NICAM is being transmitted. During test transmissions, it is possible that the sound received doesn't correspond to the picture being viewed. In order to receive a synchronized sound and picture, select monaural sound with either AUDIO OUT or with NICAM/MONO. This will only apply until NICAM transmissions are fully operational.
At this time the NICAM signal is transmitd on stereo channels only, since the M1 and M2 formats are not yet available. Even if the soundtrack is in MONO the stereo indicator will remain illuminated.

Controls and Connection Sockets

This gives a detailed explanation of the function of each button, switch and connection socket.



❶ OPERATE
To turn the VTR on and off.

❷ EJECT
To eject a video cassette.

❸ Cassette Compartment
Insert a video cassette here.

❹ CLOCK SET
To set the time.

❺ TUNER PRESET
To initiate TV station settings for the tuner.

❻ Indicator Lamps for M1, M2 and Stereo Reception
When receiving a TV programme, automatically indicates when a TV programme is broadcast with the NICAM sound system.

❼ PAUSE/STILL
During playback: Still picture.
During recording: To interrupt recording.
In the stop mode: Still picture.

❽ PLAY
To start playback, "▷" is lit.

❾ STOP
To stop any playback or recording.

❿ EDIT
OFF: For normal VTR operation.
ON: For dubbing.

⓫ REMOTE MODE (VTR 1/ VTR 2)
VTR 1: Set to this position on both the VTR and remote controller for normal use with one VTR.
VTR 2: Set to this position when using two Panasonic VTRs.
This allows the remote controller to be set for operating VTR 1 or VTR 2.

⓬ PICTURE
To make picture sharper (SHARP) or softer (SOFT).

⓭ HI-FI REC LEVEL
To adjust the recording level to peak at [illegible] dB on the recording level indicator.

⓮ AUDIO DUB
To set up the VTR for audio dubbing.
A.DUB indicator lights up.

⓯ INSERT
To set up the VTR for insert editing.
INSERT indicator lights up.

⓰ HI-FI/NORMAL MIX
OFF: Normally set at this position to reproduce the better sound available from the Hi-Fi track.
ON: Both sound tracks are played back mixed together. Use this setting when playing back a cassette tape which has been insert edited or audio dubbed.

⓱ NICAM/MONO
NICAM: Normally set at this position.
MONO: Only set at this position to record the normal sound during a NICAM broadcast or if the stereo sound is distorted due to inferior reception conditions.

⓲ Infra-red Remote Control Receiver Window

⓳ Display

⓴ CHECK/PROG
To select a timer programme number.
"1, 2, 3... or 8" is lit.
To display details of preset timer recording.

㉑ −+/∨∧
To set the clock and timer recording.
To select the required programme position (TV station).

㉒ NEXT/SP/LP
To proceed to the next item during setting procedure.
To select the tape speed required for recording.
SP gives the best picture quality.
LP gives the longest recording time.

㉓ SHIFT/SLEEP
To blank unoccupied programme position.
To set the time to turn off the VTR automatically.

㉔ REC
To start a recording.

㉕ TIMER REC
To turn the timer recording function on and off.
[illegible] is lit or not lit.
Once operating timer recording function, the normal VTR operation is not possible unless this button is set to off.

㉖ MIC
To connect a microphone for recording.
Then, this socket has priority.

㉗ Jog Dial
To locate any desired frame with utmost precision.

㉘ Shuttle Ring
In the stop mode: To rewind or fast forward the tape.
In the playback mode:
To search picture backward or forward.
In the still playback mode:
To adjust playback speed backward or forward.
In the rewind or fast forward mode:
To obtain high speed picture.

㉙ RF OUT
To connect to the aerial terminal on a TV set.

㉚ LEVEL
Used to adjust the UHF aerial signal strength.
HIGH: For normal position.
LOW: If a diagonal pattern or stripes appear on the picture.

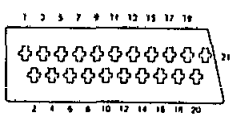
㉛ TEST SIGNAL
The test signal is transmitted on channel 36.

㉜ AUDIO OUT
To connect the audio cable to a TV or another video recorder.

㉝ RF IN
To connect to the external aerial.

㉞ CH ADJ.
To adjust the RF transmitting channel 30–42.

㉟ ㊱ AV1/AV2
This 21-pin scart terminal carries input and output signals for both picture and sound. TV sets equipped with a similar socket can be connected here.
This is also called Scart
Peritel
Euro Connector
Euro AV



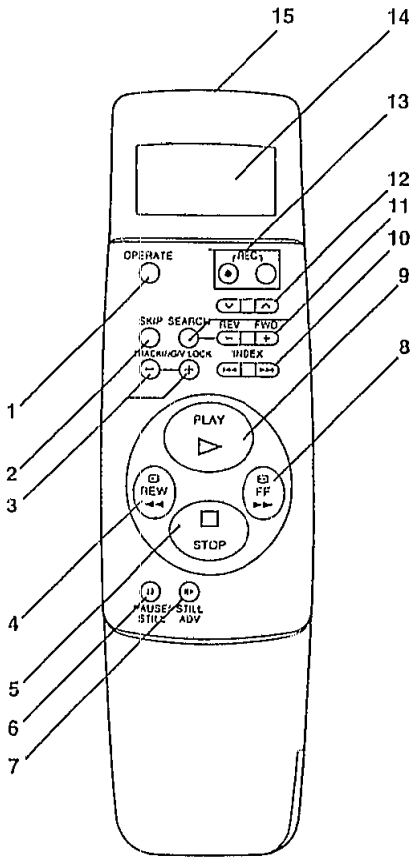
1 AUDIO OUTPUT 8 SWITCHING VOLTAGE
2 AUDIO INPUT 17 VIDEO GROUND
3 AUDIO OUTPUT 19 VIDEO OUTPUT
4 AUDIO GROUND 20 VIDEO INPUT
6 AUDIO INPUT 21 GROUND

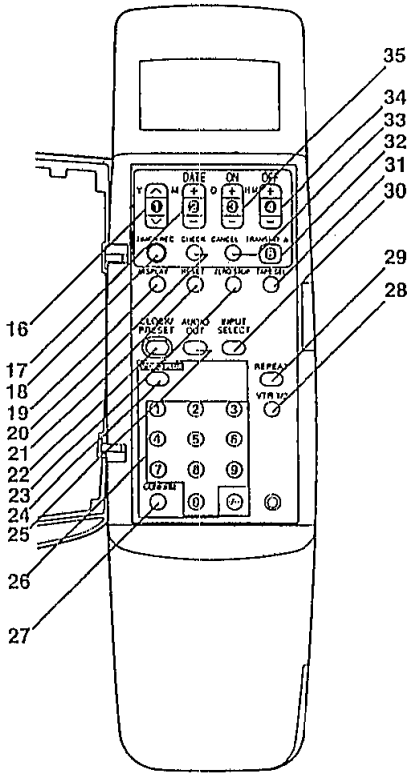
No connection; 5, 7, 9, 10, 11, 12, 13, 14, 15, 16, 18

㊲ SYNC. EDIT
Connecting to a Movie Camera equipped with Synchro Edit Function.

㊳ AC IN~
To connect to the main power supply.

Infra-red Remote Controller





1 OPERATE
To turn the VTR on and off.

2 SKIP
To start cue playback in 30 seconds interval during playback.
- Each press gives a 30 seconds time span up to 4 minutes.

3 TRACKING/V-LOCK
For manual tracking adjustment
The + and − buttons are used to adjust the tracking when, for example, noise bars on the picture are better removed manually than by the automatic digital tracking control. After making a manual adjustment, press both buttons together to return to automatic digital tracking control.

For slow tracking adjustment
When noise bars appear during Still, Still Advance or Slow playback, switch over to slow playback and adjust with the "+" or "−" button to reduce the noise bars.

For vertical locking adjustment
Use the + and − buttons to minimize any vertical jitter during still-picture playback.

4 REW (REWIND)
In the stop mode: To rewind the tape.
In the playback mode: To search backward.
In the rewind mode: To obtain high speed picture.
"◁◁" is lit.

5 STOP
To stop any playback or recording.

6 PAUSE/STILL
During playback: Still picture.
During recording: To interrupt recording.

7 STILL ADV
To advance a still picture during still playback.

8 FF (FAST FORWARD)
In the stop mode: To fast forward the tape.
In the playback mode: To search forward.
In the fast forward mode: To obtain high speed picture.
"▷▷" is lit.

9 PLAY
To start playback. "▷" is lit.

10 INDEX
For the index search function.

11 SEARCH
To adjust the playback speed backward or forward.

12 ∨ ∧
To select the required programme position (TV station).

13 REC
To start a recording.

14 Display

15 Infra-red Transmitter
The programming data are transmitted from here to the VTR.

16 ∧ ∨ (Y)
- To programme a timer recording.
- To set the clock.

17 DATE (M)
- To programme a timer recording.
- To set the clock.

18 TIMER REC
To turn the timer recording function on and off.
⏲ is lit or not lit.

19 DISPLAY
To change the indication on the VTR Display.
→Clock→Counter→Remaining Tape Time→

20 CHECK
To check timer programmes.

21 RESET
To reset the tape counter (elapsed time) to "0:00.00".
- The tape counter is automatically reset to "0:00.00" when a video cassette is inserted.

22 CLOCK/PRESET
- To set the clock.
- To set the satellite position.

23 ZERO STOP
For the zero stop function.

24 VIDEO PLUS
To programme a Video Plus+ PlusCode.

25 AUDIO OUT
To select the desired sound mode.
At the every push of this button, the audio output mode changes as follows.

→Stereo→Left→Right→Normal audio track→

and the Left and Right indicators show which sound mode is selected in the following way.

Stereo: Both the Left and Right indicators are lit.
Left: The Left indicator is lit.
Right: The Right indicator is lit.
Normal: Both the Left and Right indicators are not lit.

26 Programme Position Selector Buttons
- To select the programme positions.

9: (9)

19: (0) -- (1) -- (9)

- To enter a PlusCode.

27 CONFIRM
To convert the data of a PlusCode.

28 VTR1/2
VTR 1: Set to this position on both the VTR and remote controller for normal use with one VTR.
VTR 2: Set to this position when using two Panasonic VTRs.
This allows the remote controller to be set for operating VTR 1 or VTR 2.

29 REPEAT
For the repeat playback function

30 INPUT SELECT
To select the "A1" or "A2" external recording source.

31 TAPE SEL
To set the cassette tape length in order to obtain correct indication of the remaining tape time.
E195: For E30, -60, -90, -120, -180 and -195 tapes.
E240: For E240 tape.
E260: For E260 tape.

32 TRANSMIT
To transmit the data that has been set on the remote controller to the VTR.

33 CANCEL
To cancel the settings made for a timer recording.

34 OFF (H:M)
- To programme a timer recording.
- To set the clock.
- To set the satellite position

35 ON (D)
- To programme a timer recording.
- To set the clock.

Power Source for the Remote Controller

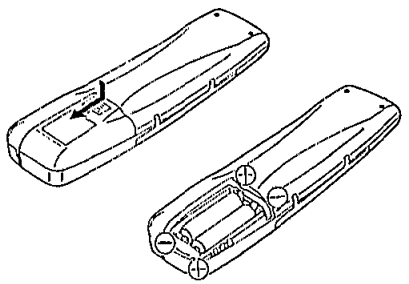
The remote controller is powered by 2 "UM3" or "R6" size batteries. The life of the batteries is about one year, although this depends on the frequency of use.

- When whatever appears on the display becomes faint, please replace the batteries with new ones.

Precautions for Battery Replacement

- Load the new batteries with their polarity (⊕ and ⊖) aligned correctly.
- Do not apply heat to the batteries, or an internal short-circuit may occur.
- If you do not intend to use the remote controller for a long period of time, remove the batteries and store them in a cool and dry place.
- Remove spent batteries immediately and dispose of them.
- Do not use an old and a new battery together, and never use an alkaline battery with a manganese battery.

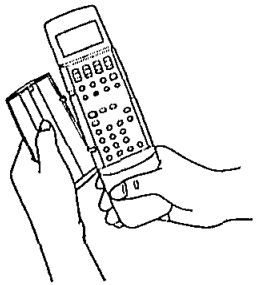
Installing the Batteries



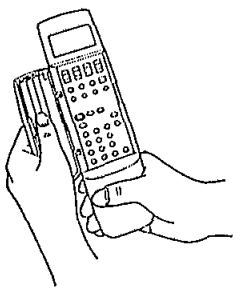
How to refit the Remote Controller Door

If the door of the remote controller is forced to open too much, it may come off. In this case, please follow the steps below.

1 Refit the lower part of the door.



2 Insert the upper part of the door until it locks with a click.



Caution for AC Mains Lead

For your safety please read the following text carefully

This appliance is supplied with a moulded three pin mains plug for your safety and convenience.
A 5 amp fuse is fitted in this plug.
Should the fuse need to be replaced please ensure that the replacement fuse has a rating of 5 amps and that it is approved by ASTA or BSI to BS 1362.
Check for the ASTA mark ⓐ or the BSI mark ⓑ on the body of the fuse.

If the plug contains a removable fuse cover you must ensure that it is refitted when the fuse is replaced.
If you lose the fuse cover the plug must not be used until a replacement cover is obtained.
A replacement fuse cover can be purchased from your local Panasonic Dealer.

IF THE FITTED MOULDED PLUG IS UNSUITABLE FOR THE SOCKET OUTLET IN YOUR HOME THEN THE FUSE SHOULD BE REMOVED AND THE PLUG CUT OFF AND DISPOSED OF SAFELY.
THERE IS A DANGER OF SEVERE ELECTRICAL SHOCK IF THE CUT OFF PLUG IS INSERTED INTO ANY 13 AMP SOCKET.

If a new plug is to be fitted please observe the wiring code as shown below.
If in any doubt please consult a qualified electrician.

IMPORTANT

The wires in this mains lead are coloured in accordance with the following code:

Blue:	Neutral
Brown:	Live

As the colours of the wires in the mains lead of this appliance may not correspond with the coloured markings identifying the terminals in your plug, proceed as follows:
The wire which is coloured BLUE must be connected to the terminal in the plug which is marked with the letter N or coloured BLACK.

The wire which is coloured BROWN must be connected to the terminal in the plug which is marked with the letter L or coloured RED.

Under no circumstances should either of these wires be connected to the earth terminal of the three pin plug, marked with the letter E or the Earth Symbol ⏚.

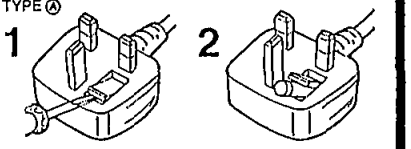
How to replace the Fuse

- There are two types of the supplied AC Mains Lead: Ⓐ and Ⓑ as shown below.

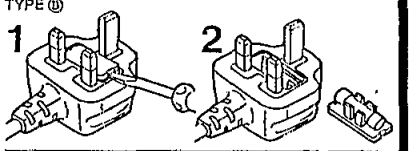
1 Open the fuse compartment with a screwdriver.

2 Replace the fuse and fuse cover.

TYPE Ⓐ



TYPE Ⓑ



Memo

SECTION 2
ADJUSTMENT PROCEDURES

2-1. DISASSEMBLY METHOD

2-1-1. DISASSEMBLY FLOW CHART

This flow chart indicates disassembly steps of the cabinet parts and the circuit boards in order to find the necessary items for servicing. When reassembling, perform the steps in the reverse order.

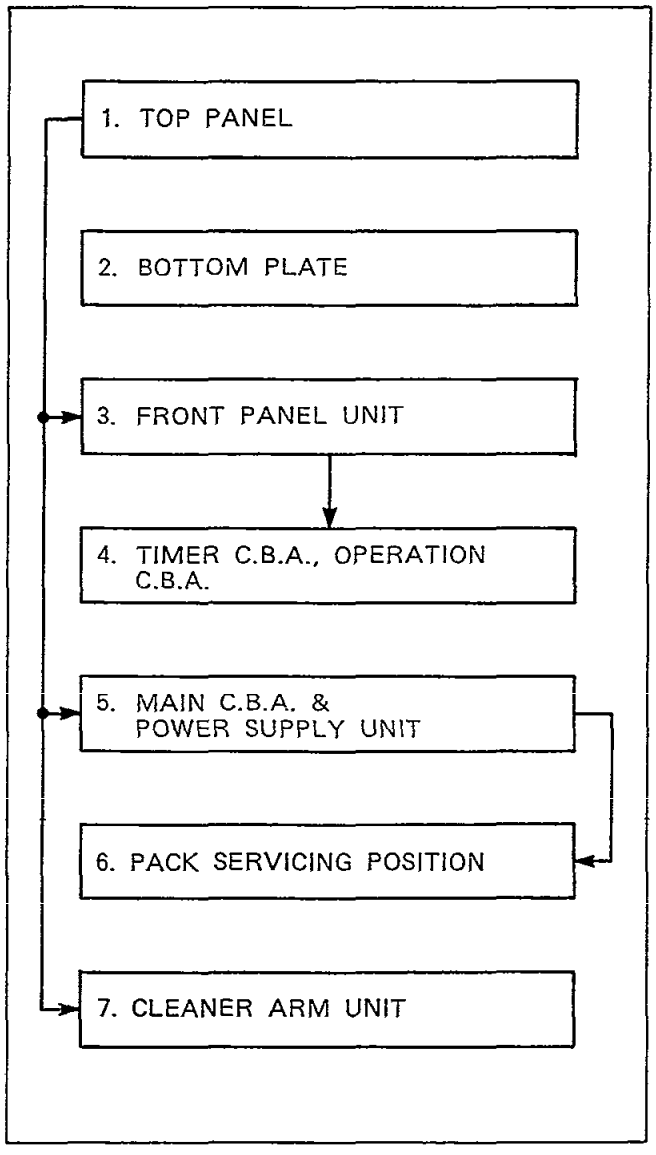

1. TOP PANEL
2. BOTTOM PLATE
3. FRONT PANEL UNIT
4. TIMER C.B.A., OPERATION C.B.A.
5. MAIN C.B.A. & POWER SUPPLY UNIT
6. PACK SERVICING POSITION
7. CLEANER ARM UNIT

Fig. D1

1. REMOVAL OF THE TOP PANEL

Remove.....4 Screws(A)

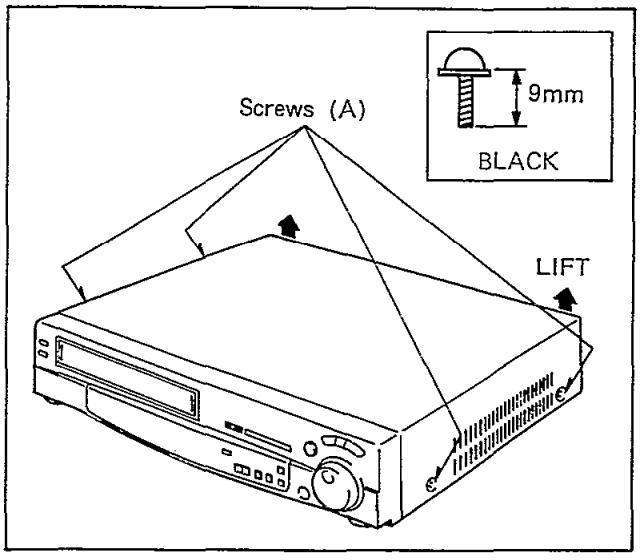


Fig. D2

2. REMOVAL OF THE BOTTOM PLATE

Remove.....6 Screws(B)

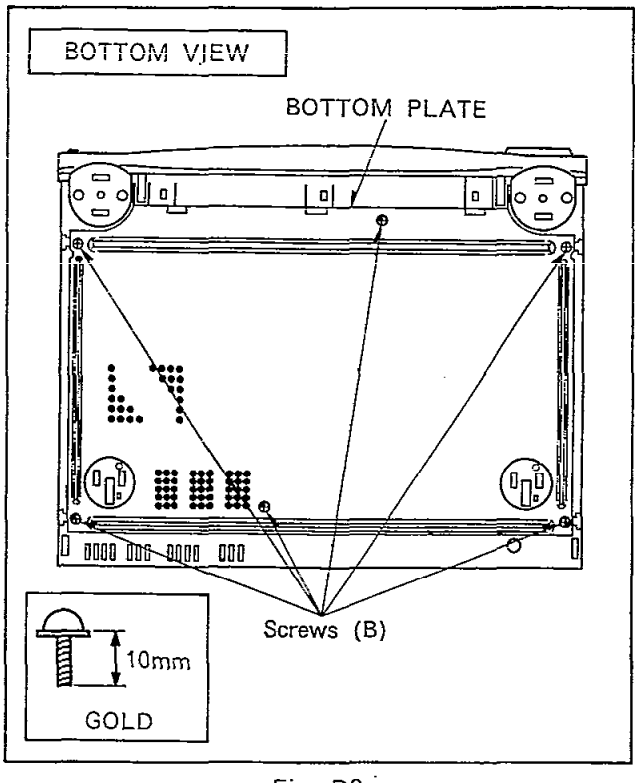


Fig. D3

3. REMOVAL OF THE FRONT PANEL UNIT

Pull out...Jog&Shuttle knob
Remove.....Screw(C)
Unlock.....8 Tabs(D)

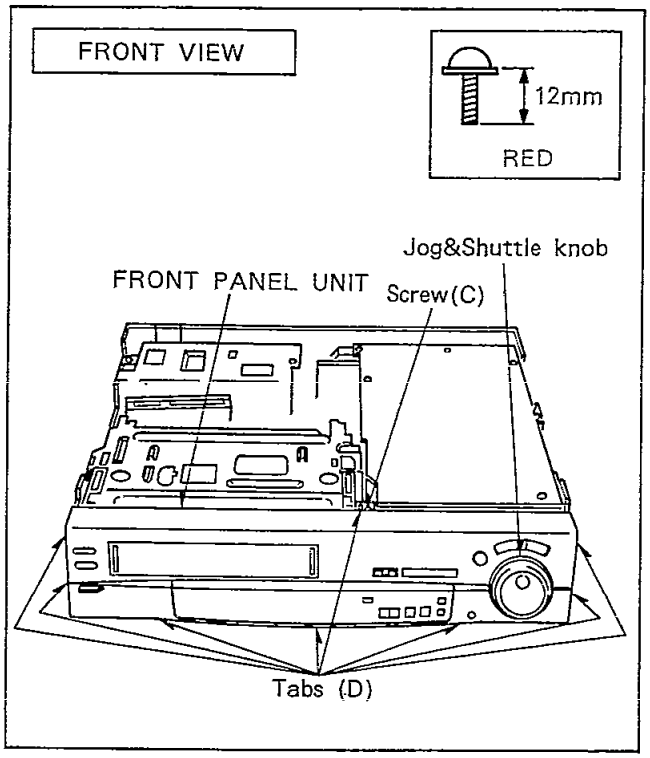


Fig. D4

4. REMOVAL OF THE TIMER C.B.A. & THE OPERATION C.B.A..

Unlock.....8 Tabs(E)

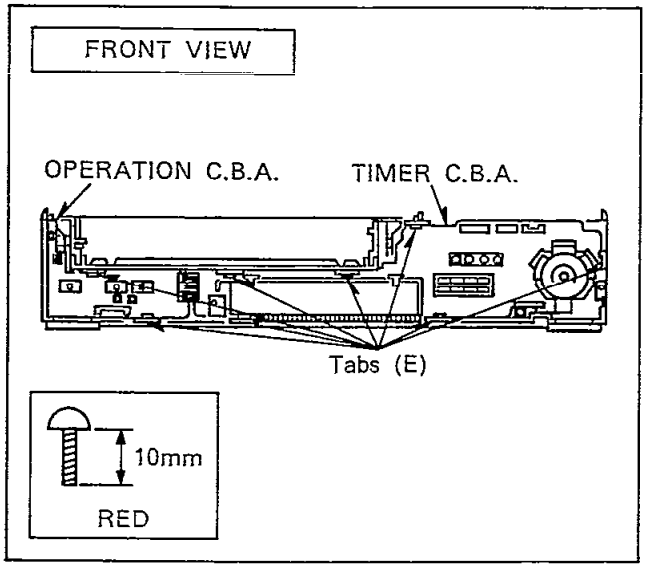


Fig. D5

5. REMOVAL OF THE MAIN C.B.A. & THE POWER SUPPLY UNIT

REMOVAL OF THE MAIN C.B.A.

Remove.....3 Screws(F)
Remove.....2 Screws(G)
Unlock.....Tab(H)

REMOVAL OF THE POWER SUPPLY UNIT

Remove.....2 Screws(I)
Remove.....Screw(J)

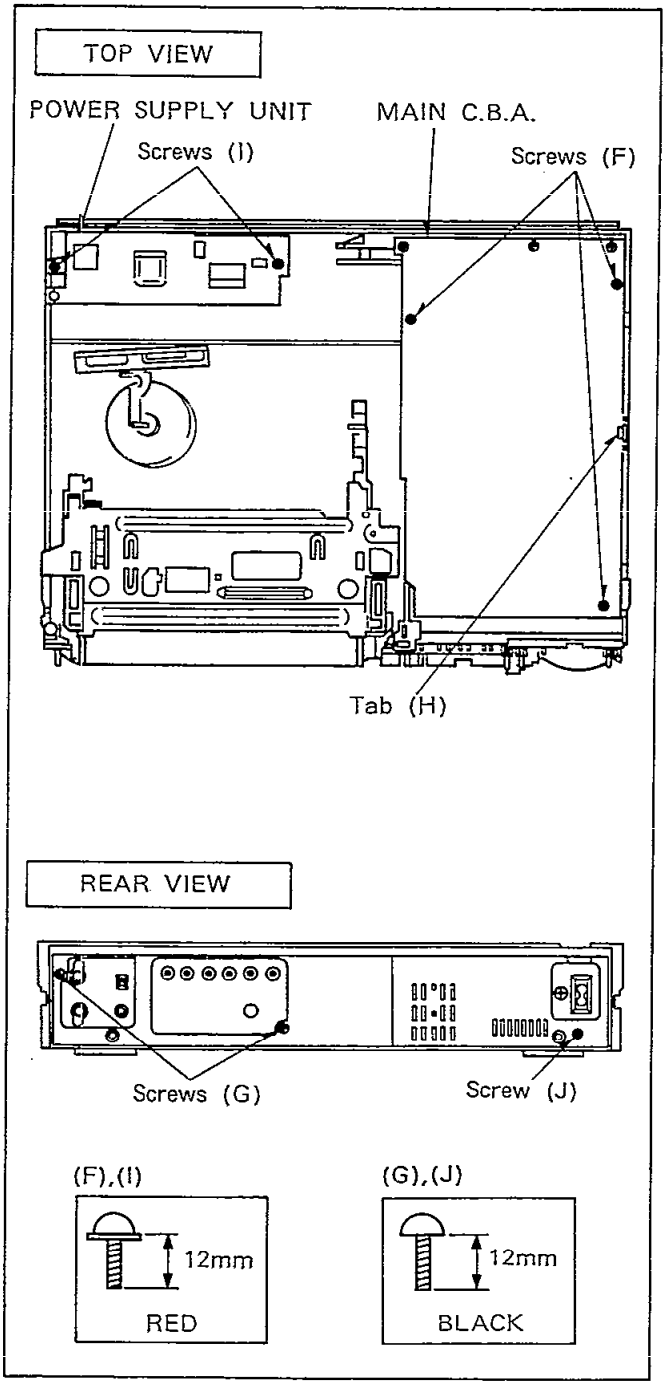


Fig. D6

6. PACK SERVICING POSITION

CAUTION:
Confirm the isolation between Mechanical Chassis and Main C.B.A. before connecting Main AC.

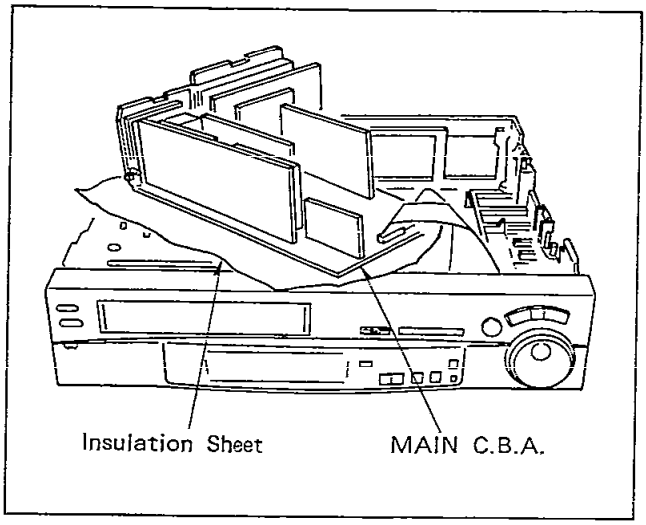


Fig. D7

7. REMOVAL OF THE CLEANER ARM UNIT

1. Unlock the locking portion(K).
2. Pull up the Cleaner Arm Unit.

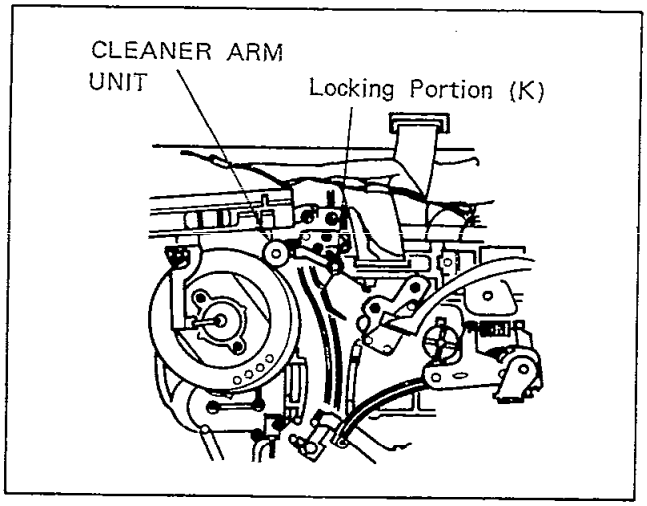


Fig. D8

2-2. MECHANICAL ADJUSTMENT PROCEDURES

2-2-1. TENSION POST POSITION ADJUSTMENT

(Equipment Required)
Hex Wrench (VFK0326)

1. Disconnect the AC plug.
2. Remove the TOP PLATE and CASSETTE HOLDER.
3. Turn the LOADING MOTOR until the loading completes.
4. Adjust the hole of TENSION BAND FASTENER by hex wrench so that the left edge of IMPEDANCE ROLLER and TENSION ARM UNIT as shown in Fig.M1.

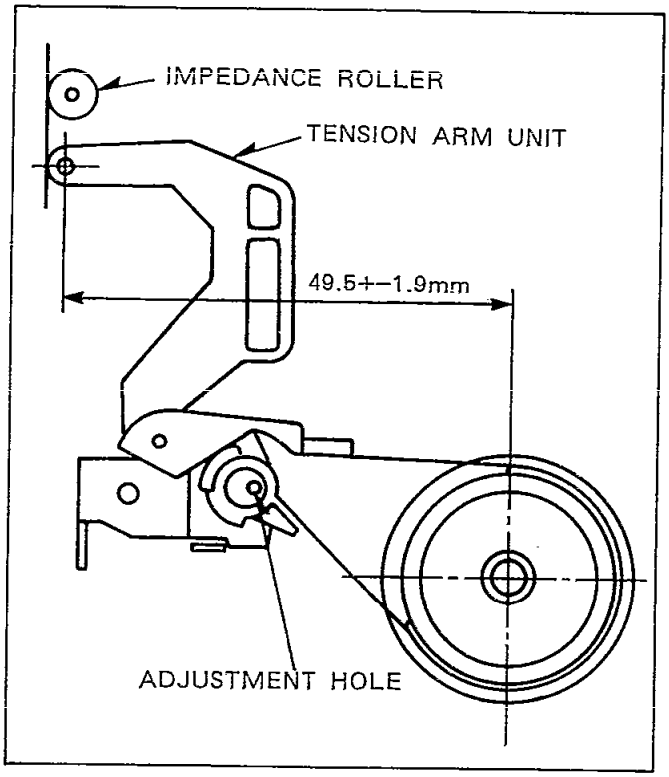


Fig. M1

2-2-2. BACK TENSION ADJUSTMENT

(Equipment Required)
Back Tension Meter (VFK0132)
VHS Cassette Tape (180 minutes tape:PAL)
(120 minutes tape:NTSC)

(Specification)
22.5–27.5g

1. Playback the cassette tape from the beginning and wait until the tape movement get the stabilization.
(for approx. 10~20 seconds)
2. Insert the Back tension Meter into the path of a tape, and measure the back tension to be within specification as shown in Fig.M2.

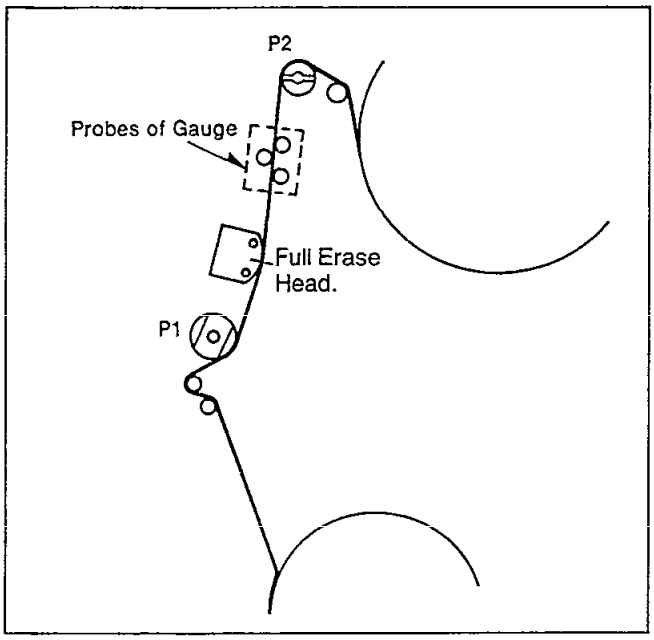


Fig. M2

3. If it is out of specification, change the spring notch as shown in Fig.M3.

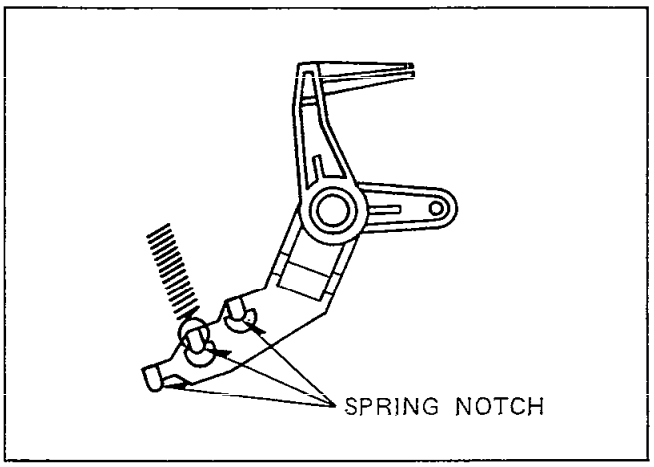


Fig. M3

2–2–3. P2 AND P3 POSTS ADJUSTMENT (PREADJUSTMENT)

(Equipment Required)
Post Adjustment Screwdriver (VFK0329)

1. Remove the TOP PLATE and CASSETTE HOLDER.
2. Turn the LOADING MOTOR until the unloading completes.
3. Loosen the fixing screw of P2 and P3 POSTS.
4. Rotate the P2 and P3 POSTS clockwise to the end.
5. Rotate the P2 and P3 POSTS twice counterclockwise.

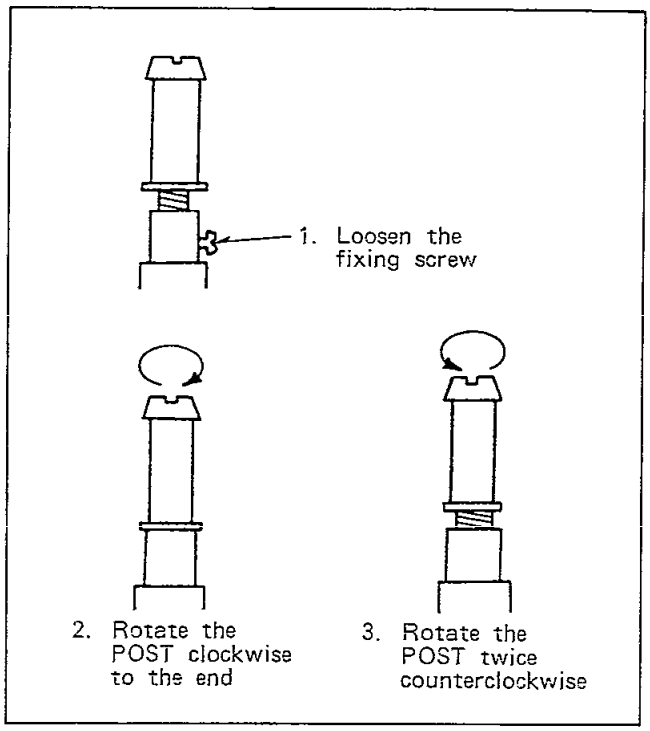


Fig. M4

6. Install the TOP PLATE and CASSETTE HOLDER
7. Playback the cassette tape and make sure that the edges of the tape are not curling at the bottom or top end of the P1, P2, P3 and P4 POSTS as shown in Fig.M5.

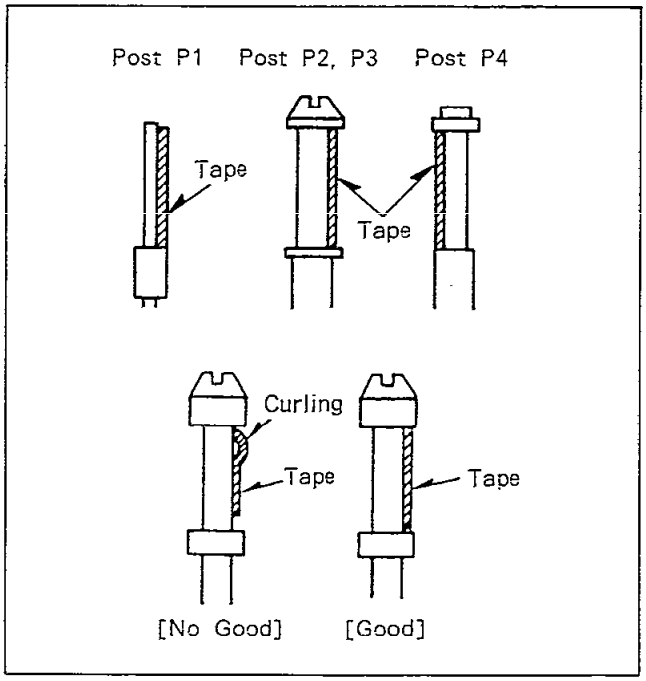


Fig. M5

8. If curling appears, readjusts the P2 and P3 POSTS.

2-2-4. TAPE INTERCHANGEABILITY ADJUSTMENT

Carry out the following procedures for Tape interchangeability Adjustment to do it correctly and smoothly.

(1) Adjustment of P2 and P3 Posts.
(2) Height Adjustment of A/C Head (1).
(3) Height Adjustment of A/C Head (2).
(4) Fine-Adjustment of A/C Head
(5) Horizontal Position Adjustment of A/C Head.

If the Tape Interchangeability Adjustment is not perfect, repeat the above procedures from (1) to (5).

CAUTIONS:

To mark a Adjustment Mode for Tape Interchangeability, connect a Cut Jumper Wire as shown in Fig.M6.
(Auto Tracking is turned off.)
After finishing the adjustment, disconnect the Cut Jumper Wire.

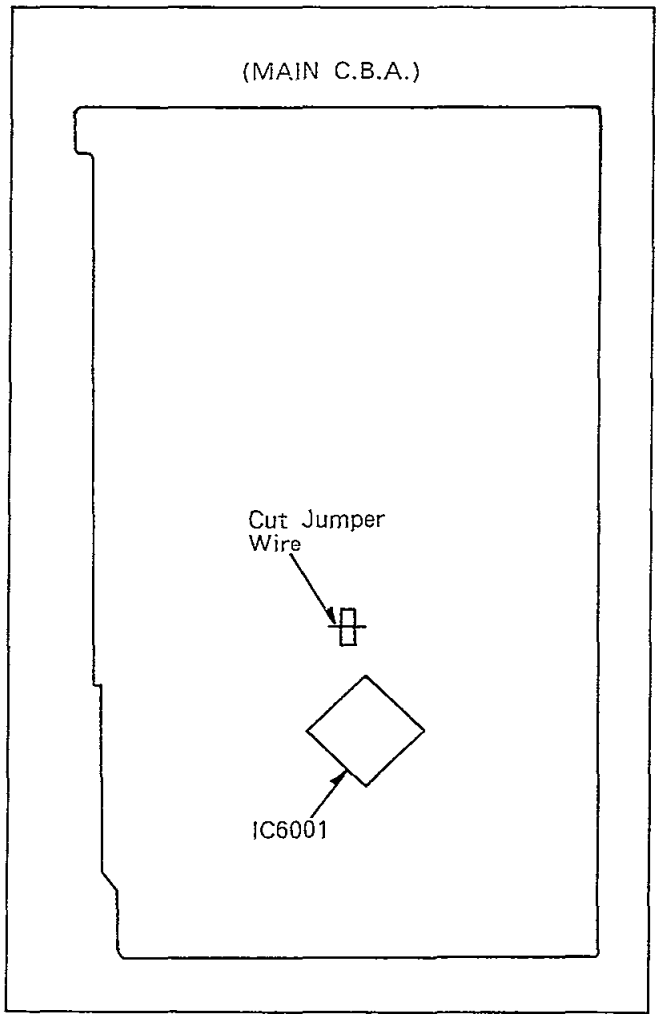


Fig. M6

(1) Adjustment of P2 and P3 Posts

(Equipment Required)
Alignment Tape(PAL/SECAM: VFJ8125H3F,
NTSC: VFM8080HQFP)
Post Adjustment Screwdriver (VFK0329)

1. Set the tracking control into the fix position. (by pressing the tracking (+) and (−) button simultaneously on the Remote Controller)
And connect the oscilloscope to the output of the Head Amp as shown in Fig.M7.

Note:

To get a stable waveform of the Head Amp output on the oscilloscope, use the head switching pulse as a triggering signal as shown in Fig.M7.

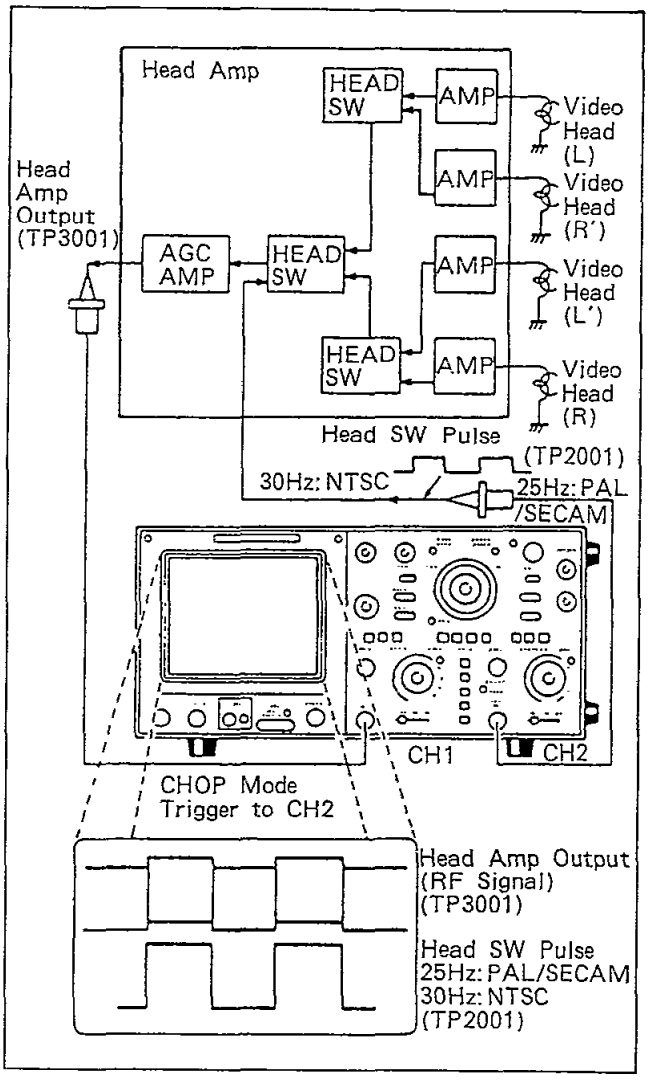


Fig. M7 Connect of Oscilloscope

2. Playback the alignment tape.
3. If the RF envelope appears like example "A" or "B" in Fig.M8 then adjustment of the tape guide post (P2:Entrance) is necessary.
4. Adjust the tape guide post (P2) with the post adjustment screwdriver so that the RF envelope waveform at the entrance portion becomes flat as shown in Fig.M8–"C".

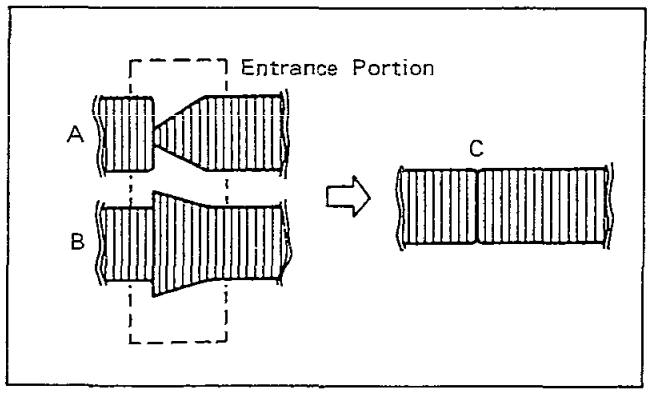


Fig. M8

5. If the RF envelope appears like example "D" or "E" in Fig.M9, then adjustment of the tape guide post (P3:Exit) is necessary.
6. Adjust the tape guide post (P3) in the same manner as the P2 post so that the exit portion becomes flat as shown in Fig.M9–"F".

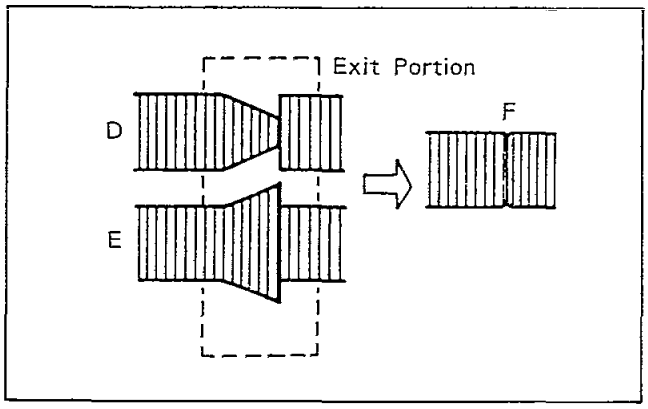


Fig. M9

7. Turn the Tracking VR fully clockwise and counter clockwise. (Keep pressing + button or − button on the Remote Controller) The output envelope should vary nearly parallel with other condition as shown in Fig.M10.
8. Set the tracking control into centre fix position and adjust for maximum RF envelope, whilst being as flat as possible.

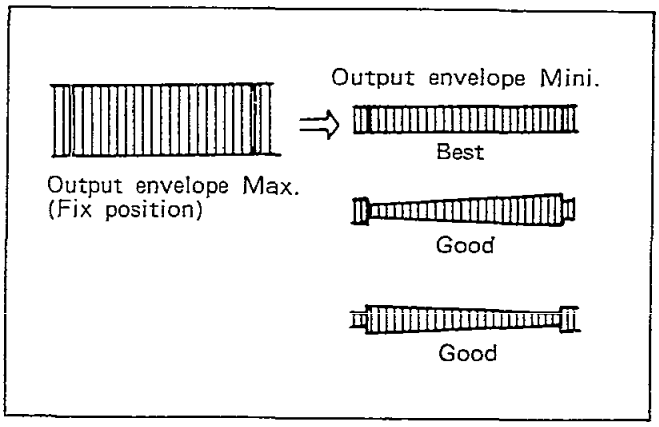


Fig. M10

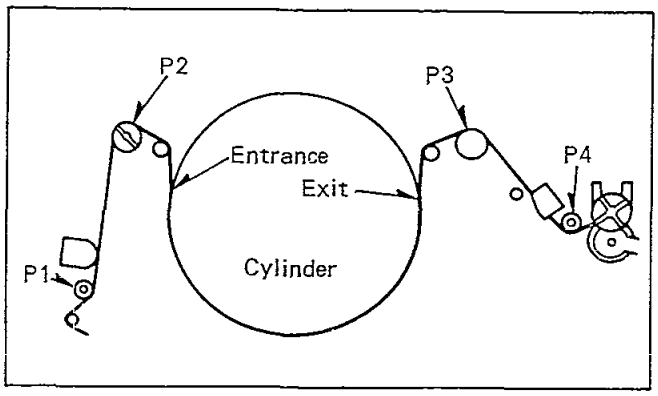


Fig. M11 Loading of Posts

(2) Height Adjustment of A/C Head (1)

1) Install the A/C HEAD on the A/C HEAD BASE(E) by 3 screws (A),(B) and (C) with springs.
2) Tighten the screw (A) unit it touches chassis and then rotate the SCREW (A) counterclockwise for approx. 1.5 times.
3) Rotate the 2 screws(B) and (C) until A/C HEAD BASE(D) and (E) is separate.

CAUTION:
When adjusting the Screws (B) and (C) on the A/C HEAD BASE(E), do not touch the Screw Driver to the face of the A/C HEAD.

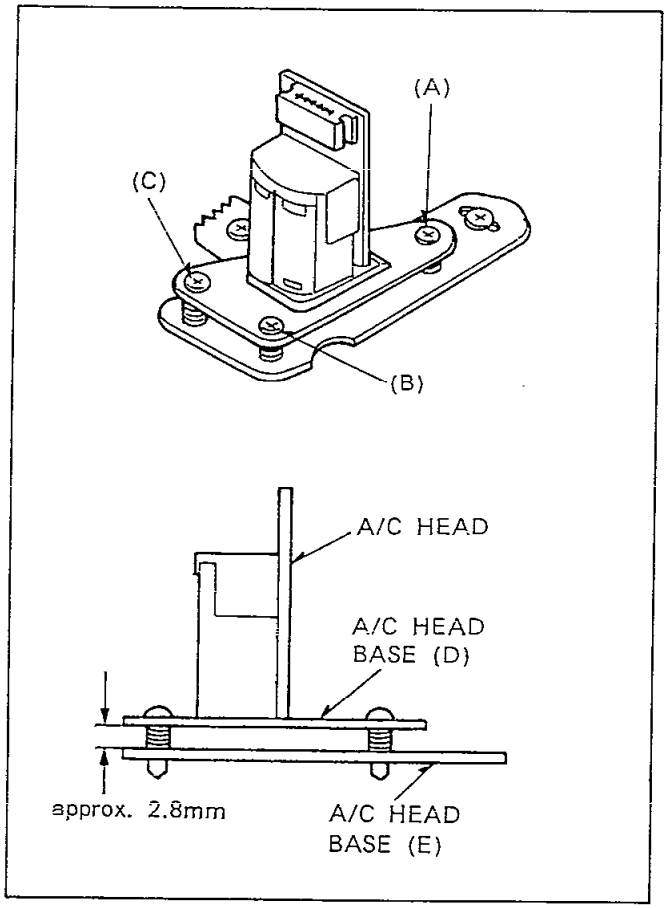
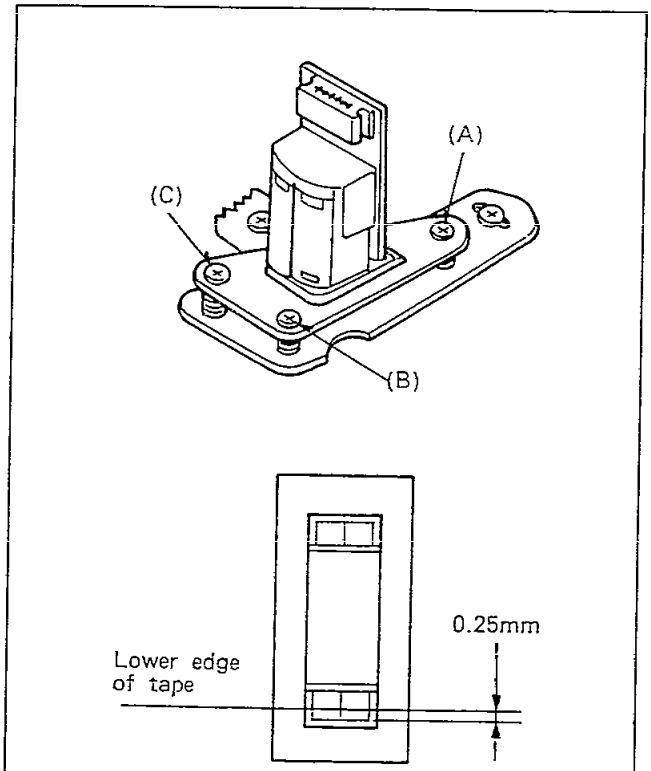


Fig. M12

(3) Height Adjustment of A/C Head (2)

1) Playback the alignment tape.
2) Rotate the screw (A) or (B) until the wrinkle appears on the lower edge of tape at P4 post.
3) Rotate the screw (A) or (B) until the wrinkle just disappears on the lower edge of tape at P4 post.
4) Connect the oscilloscope to audio output terminal.
5) Rotate the screw (C) until audio signal is maximized.



	SCREW (A)	SCREW (B)
So wrinkle appears on the lower edge of tape	COUNTER CLOCKWISE	CLOCKWISE
So wrinkle disappears on the lower edge of tape	CLOCKWISE	COUNTER CLOCKWISE

Fig. M13

(4) Fine-Adjustment of A/C HEAD

<When moving the A/C HEAD up>

1) Rotate the screw (A) counterclockwise until the wrinkle appears on the lower edge of tape at P4 post.
2) Rotate the screw (B) counterclockwise until the wrinkle just disappears on the lower edge of tape at P4 post.
3) Rotate the screw (C) counterclockwise until the audio signal is maximized.

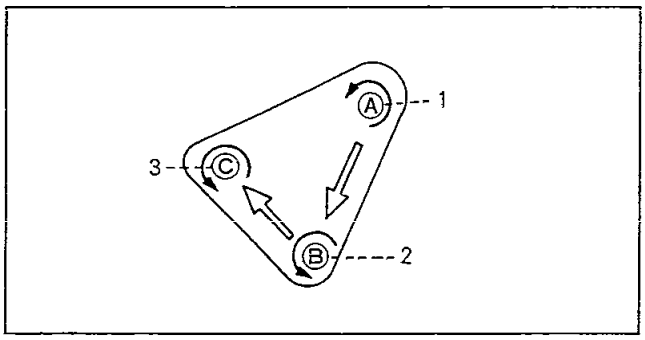


Fig. M14

<When moving the A/C HEAD down>

1) Rotate the screw (B) clockwise until the wrinkle appears on the lower edge of tape a P4 post.
2) Rotate the screw (A) clockwise until the wrinkle just disappears on the lower edge of tape at P4 post.
3) Rotate the screw (C) clockwise until the audio signal is miximized.

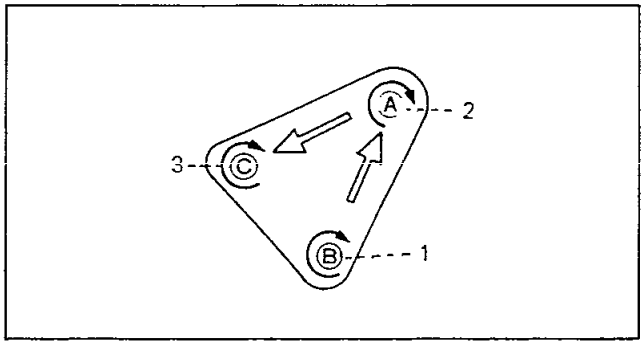


Fig. M15

(5) Horizontal Position Adjustment of A/C HEAD

1) Set the tracking control into the centre fix position. (by pressing the tracking (+) and (−) button simultaneously on the Remote Controller)
2) Connect the oscilloscope to the output of the Head Amp as shown in Fig.M7.
3) Playback the alignment tape.
4) Loosen the 2 screws (F) and (G).
5) Adjust the A/C HEAD BASE (E) until the RF envelope waveform is maximized.

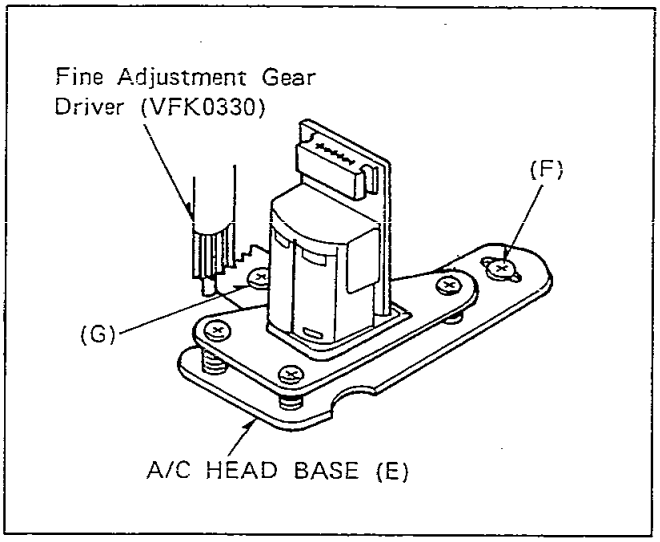


Fig. M16

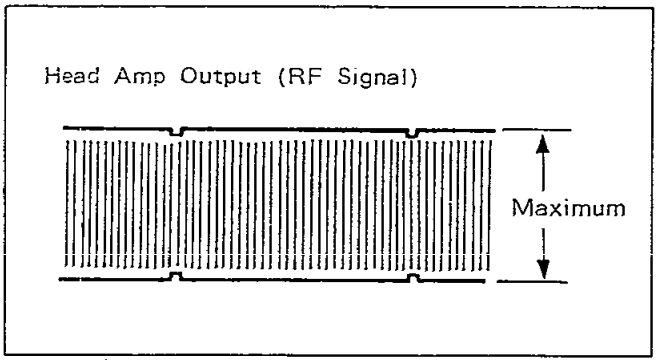
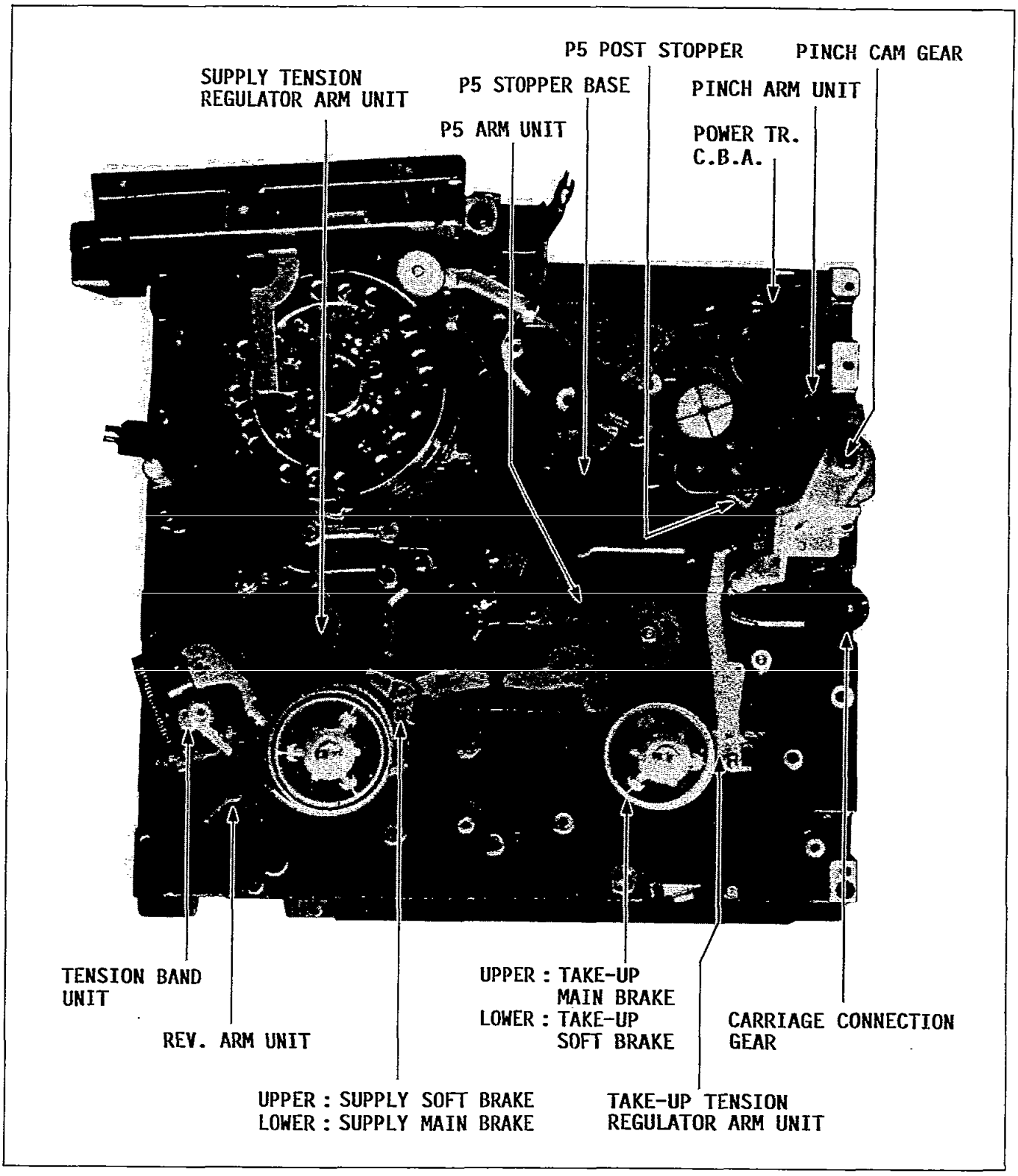


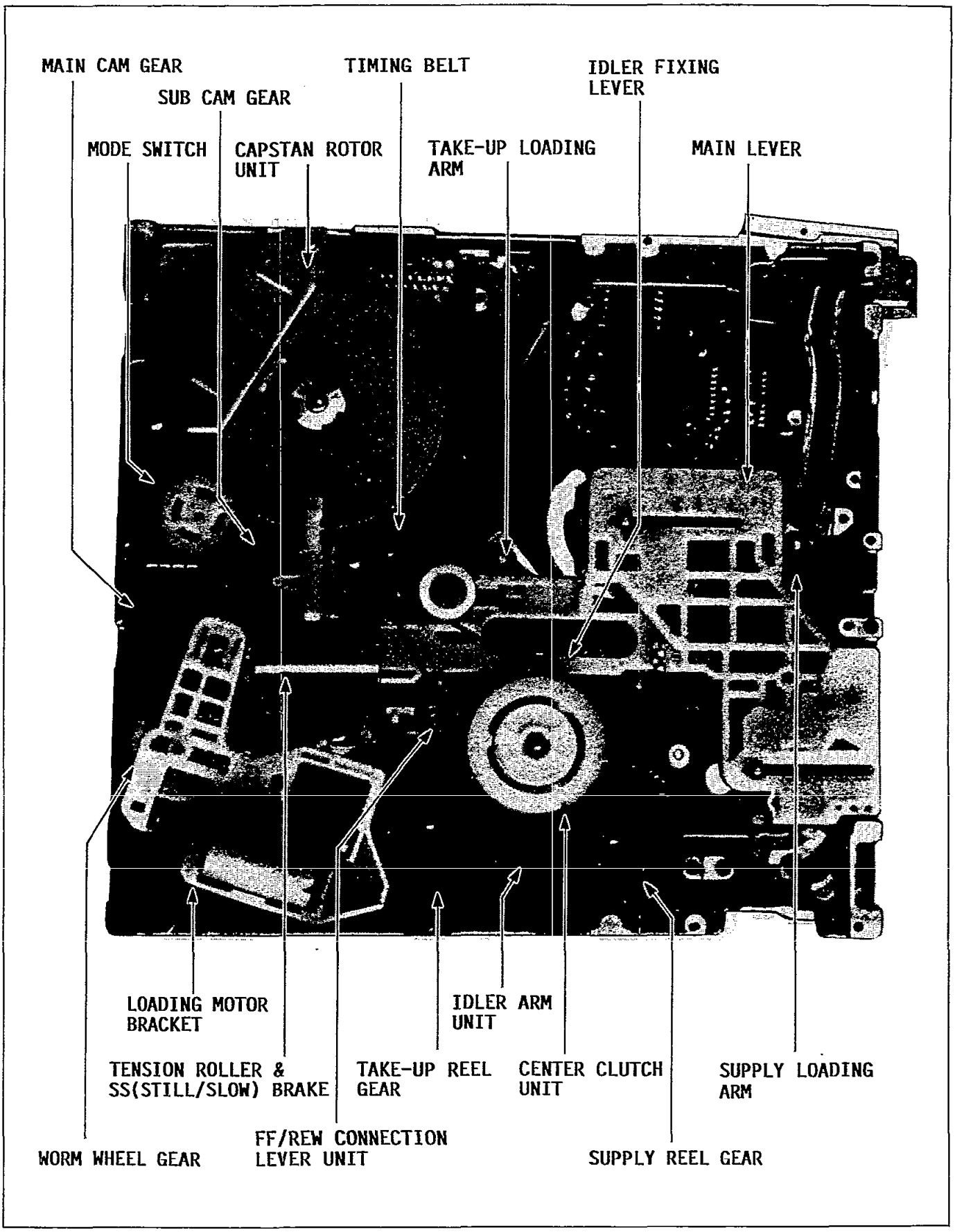
Fig. M17

2-3. DISASSEMBLY PROCEDURES OF MECHANISM

In order to remove the mechanism components it is first necessary to remove the mechanism chassis.



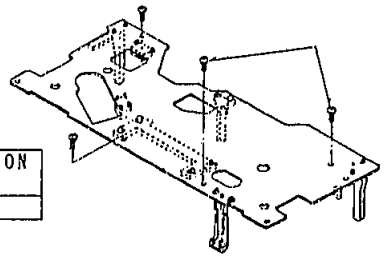
Top View of K Mechanism



Bottom View of K Mechanism

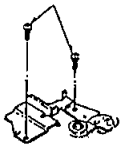
PARTS ACCESS CHART

This chart shows the parts nessessary to gain acess to other parts.

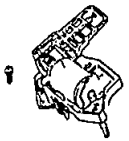


MECHANISM CONNECTION
C. B. A.
Screw...4pcs.

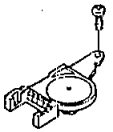
TENSION ROLLER &
SS BRAKE UNIT
Screw...2pcs.



LOADING MOTOR BRACKET
Screw...1pc.
*Locking tab...1pc.



MODE SWITCH
Screw...1pc.
*Phase Adj.

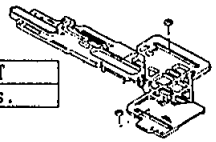


TIMING BELT

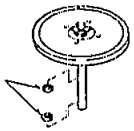
WORM WHEEL GEAR

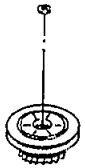
CAPSTAN STOPPER
Screw...1pc.

MAIN LEVER UNIT
Cut Washer...2pcs.



CAPSTAN ROTOR
*Oil Seal...2pcs.
*Mecha. Adj

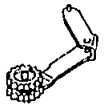




CENTRE CLUTCH
Cut Washer...1pc.

T/S LOADING GEAR

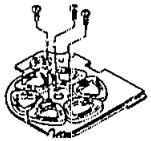
CONNECTION LEVER



IDLER REGULATOR LEVER

MAIN CAM GEAR
*Phase Adj.

CAPSTAN STATOR
Screw...3pcs.

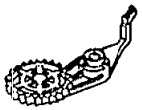


T REEL GEAR

S REEL GEAR

SUB CAM GEAR
*Phase Adj.

IDLER ARM UNIT



2-3-1. REMOVAL OF THE MECHANISM CHASSIS

1) Remove the 2 screws(A) push the HOLDER PLATE slightly to the rear of mechanism.
2) Remove the screw(B).
3) Disconnect all cables and connectors on the mechanism chassis and connector P6003 on the MAIN C.B.A.(connecting to DEW SENSOR). (Use extreme care when disconnecting the P1508)
4) Lift the mechanism chassis out of the unit.

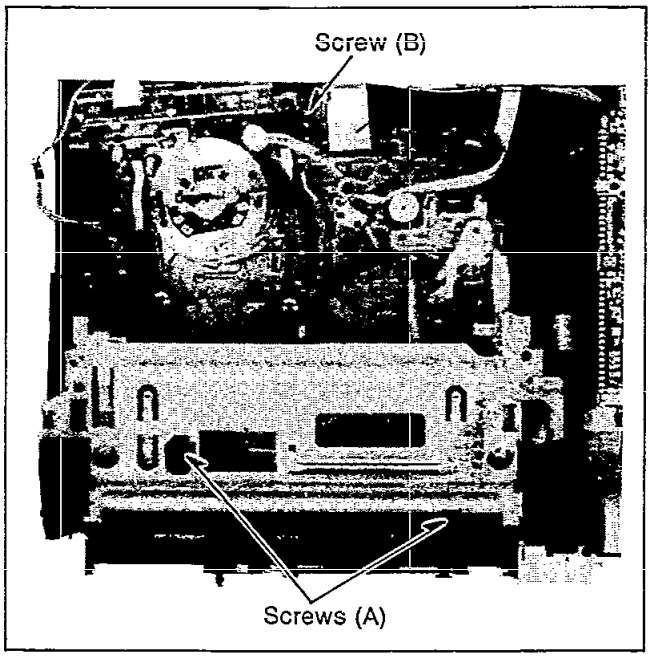


Fig. A1

2-3-2. REMOVAL OF THE MECHANISM CONNECTION C.B.A.

1) Remove the 4 screws(C).
2) Lift up on the C.B.A.

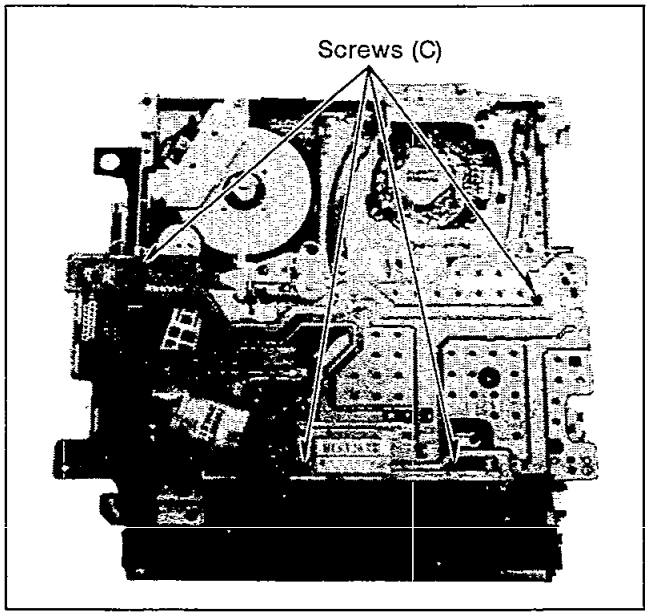


Fig. A2

2-3-3. REMOVAL OF THE TENSION ROLLER AND SS BRAKE

1) Remove the 2 screws(D).
2) Remove the TENSION ROLLER and the SS BRAKE.

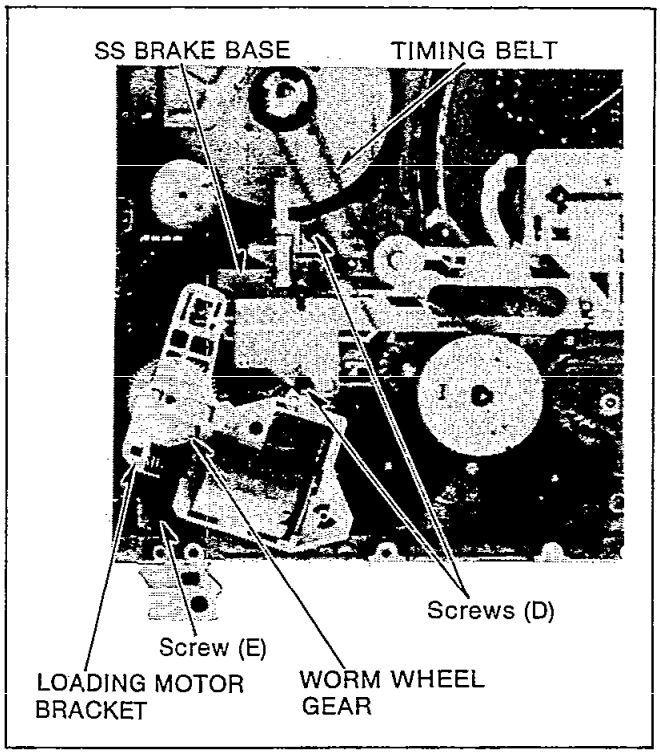


Fig. A3

2-3-4. REMOVAL OF THE TIMING BELT

1) Remove the TIMING BELT.

2-3-5. REMOVAL OF THE LOADING MOTOR BRACKET

1) Remove the screw(E) as shown in Fig.A3.
2) Disconnect the locking tab on the right by pushing the locking tab in as shown in Fig.A4.
3) Lift up on the LOADING MOTOR BRACKET and push the BRACKET towards the MAIN CAM GEAR as shown in Fig.A3.
4) Lift the WORM WHEEL GEAR off the shaft.

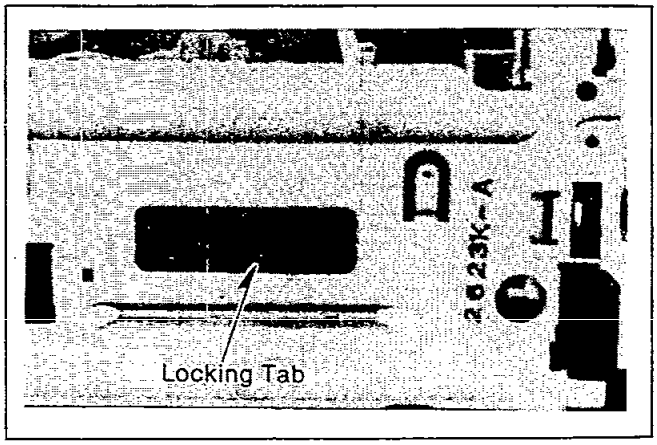


Fig. A4

2–3–6. REMOVAL OF THE MAIN LEVER UNIT

1) Remove the 2 cut washers.
2) Remove the MAIN LEVER UNIT.

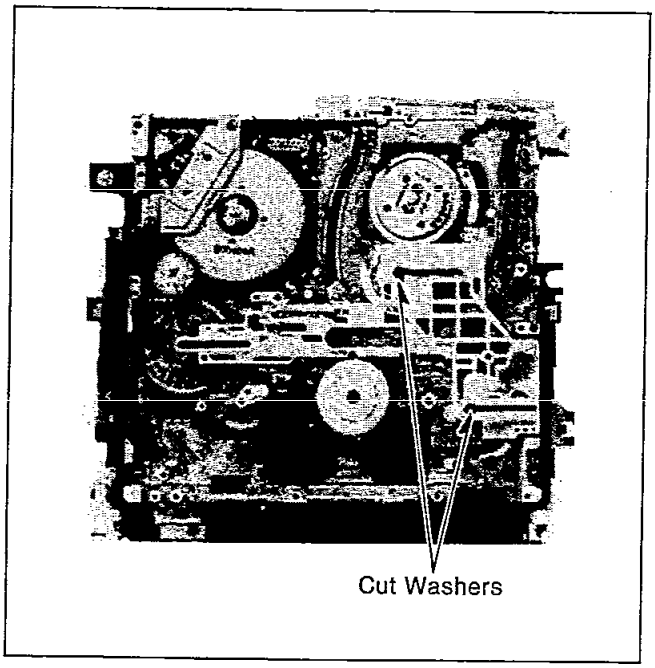


Fig. A5

2–3–7. REMOVAL OF THE TAKE–UP AND SUPPLY LOADING ARMS

1) Remove the TAKE–UP and SUPPLY LOADING GEARs by lifting them up off the post.

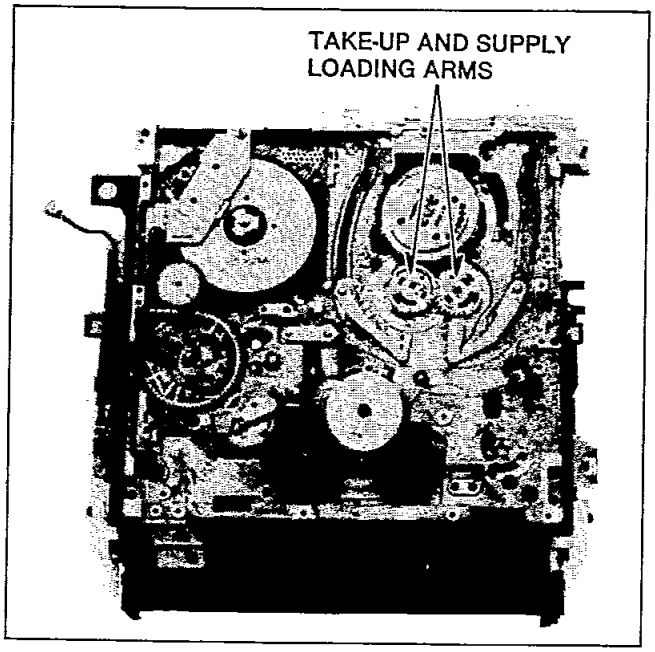


Fig. A6

2–3–8. REMOVAL OF THE MODE SWITCH

1) Remove screw(F).
2) Remove the MODE SWITCH.

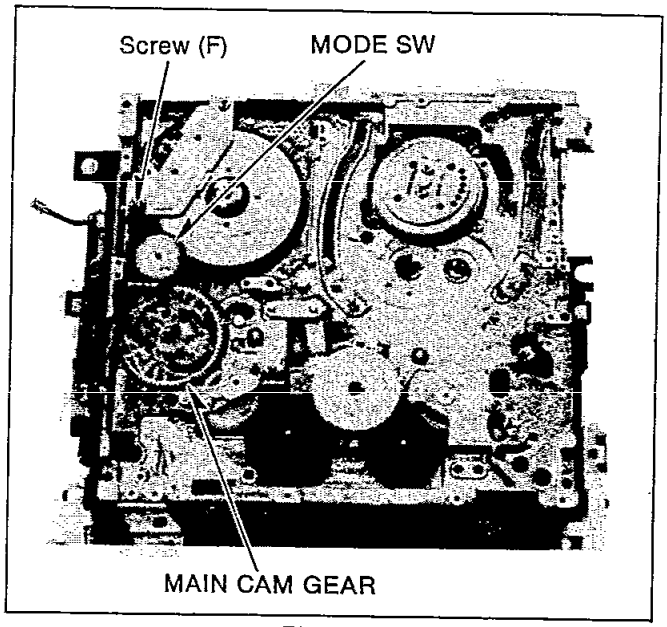


Fig. A7

2–3–9. REMOVAL OF THE MAIN CAM GEAR

1) Lift the MAIN CAM GEAR off the shaft.

2–3–10. REMOVAL OF THE CAPSTAN ROTOR UNIT

1) Remove the screw(G) and remove the CAPSTAN STOPPER as shown in Fig.A8.

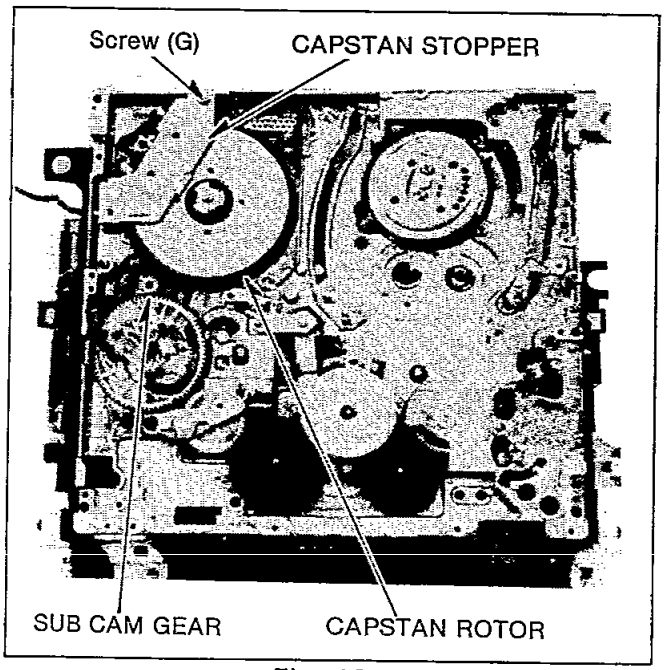


Fig. A8

2) Pull out the CAPSTAN ROTOR.
(When the CAPSTAN ROTOR is removed, 2 OIL SEALs are left in the CAPSTAN ROTOR HOUSING Fig.A9.. To avoid losing the OIL SEALs, place them back on the CAPSTAN SHAFT.)

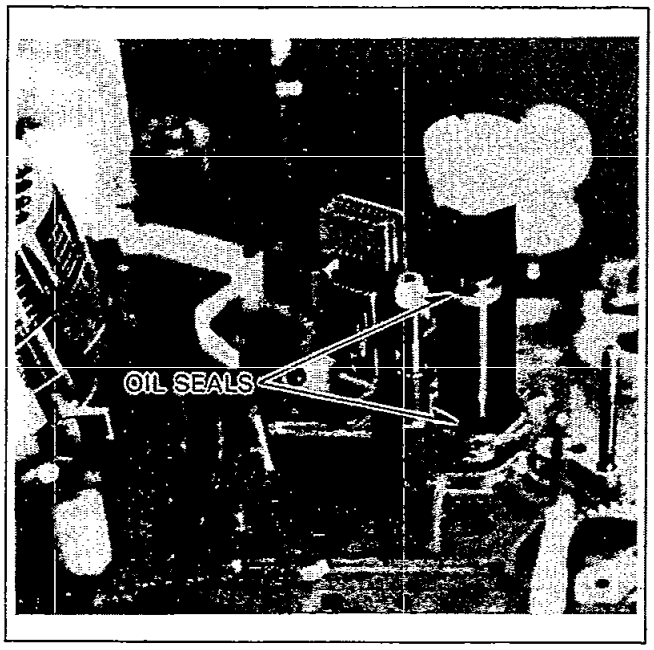


Fig. A9

3) Remove the 3 screws(H) and remove the CAPSTAN STATOR as shown in Fig.A10.

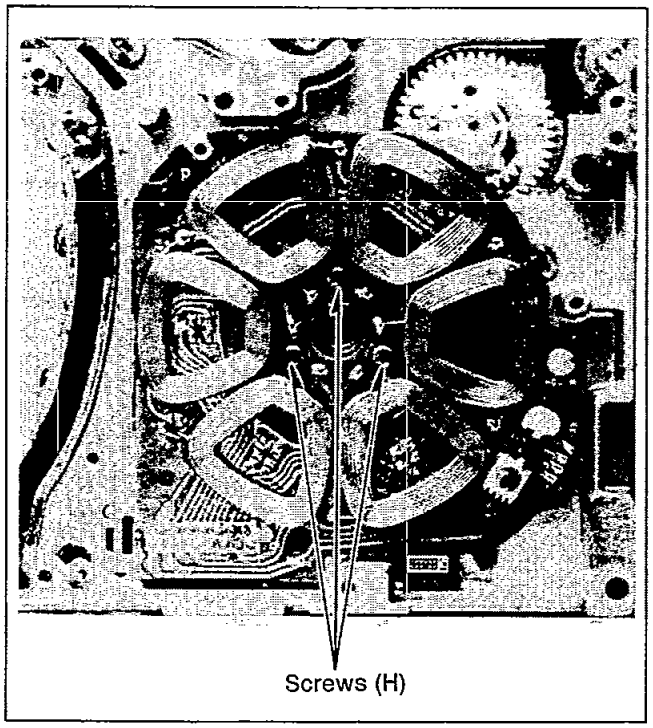


Fig. A10

2-3-11. REMOVAL OF THE SUB CAM GEAR

1) Lift the SUB CAM GEAR off the shaft.

2-3-12. REMOVAL OF THE CENTRE CLUTCH

1) Remove the cut washer.
2) Remove the CENTRE CLUTCH.

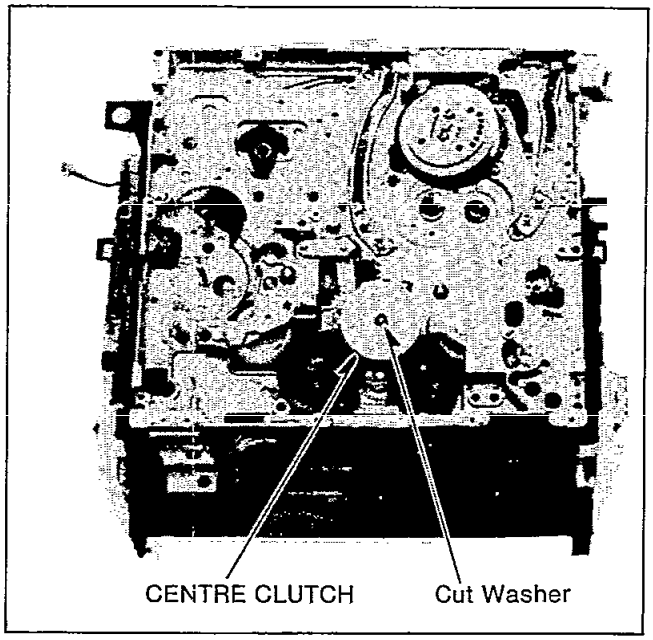


Fig. A11

2-3-13. REMOVAL OF THE TAKE-UP AND SUPPLY REEL GEARS

1) Unlock the locking tab and lift up on the reel.

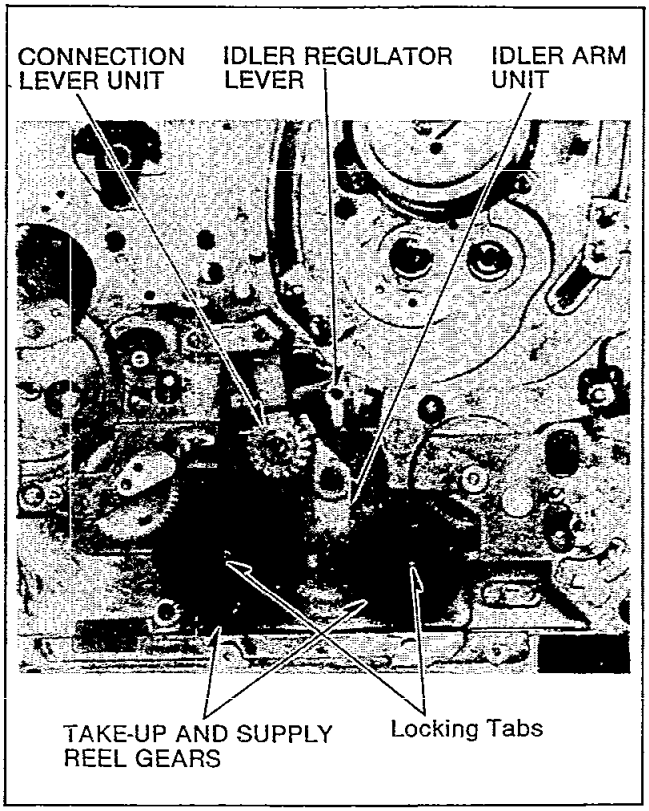


Fig. A12

2-3-14. REMOVAL OF THE IDLER ARM UNIT, CONNECTION LEVER UNIT AND IDLER REGULATOR LEVER

1) Lift the IDLER ARM UNIT and CONNECTION LEVER UNIT off the shaft.
2) Remove the IDLER REGULATOR LEVER.

2-3-15. REMOVAL OF THE TOP PLATE

1) Push the locking tabs from the outer side to inside as shown in Fig.A13.
2) Lift up on the TOP PLATE.

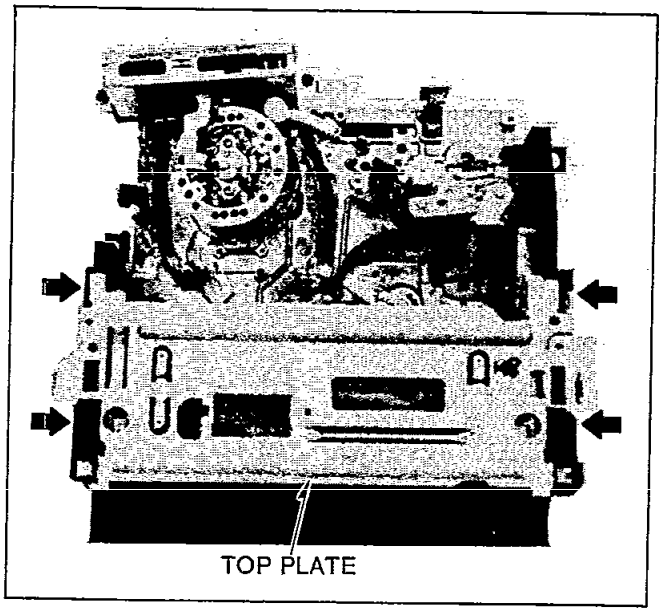


Fig. A13

NOTE:
If locking tab is broken, TOP PLATE can be installed by screws(XTB26+8G) as shown in Fig.A14.

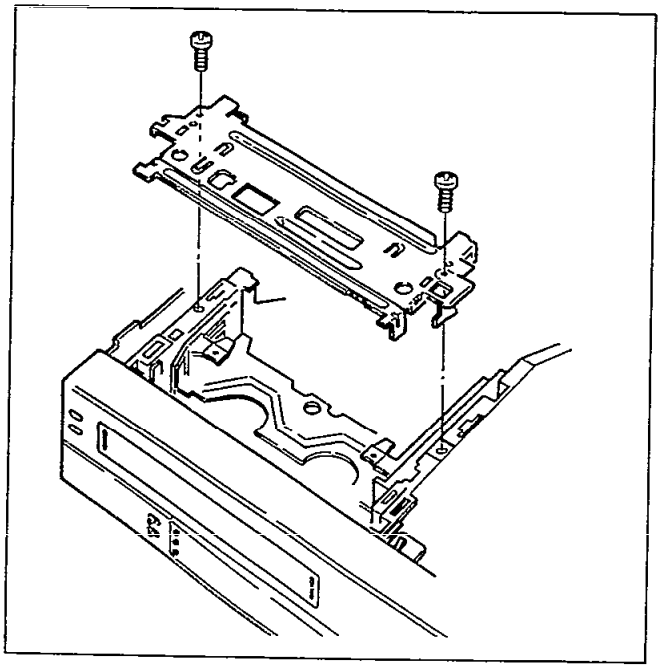


Fig. A14

2-3-16. REMOVAL OF THE CASSETTE HOLDER

1) Slide the HOLDER PLATE in the rear and lift up.
2) Remove the 4 screws(I).
3) Remove the CASSETTE HOLDER.

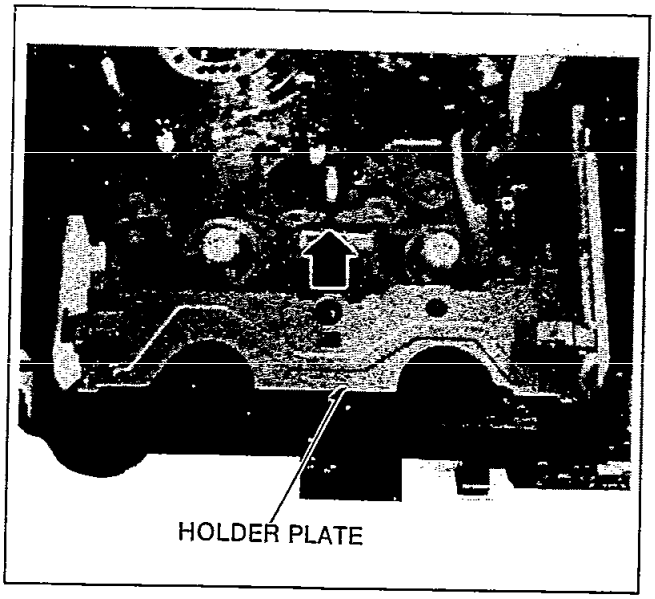


Fig. A15

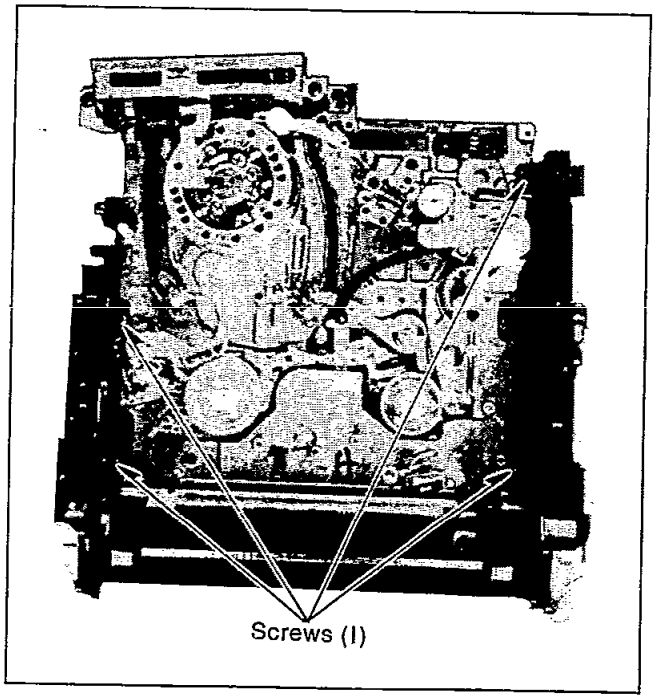


Fig. A16

2-3-17. REMOVAL OF THE PINCH ARM UNIT

1) Unlock the locking tab on the OPENER PIECE and remove it from the shaft.
2) Remove the PINCH ARM UNIT from the shaft.

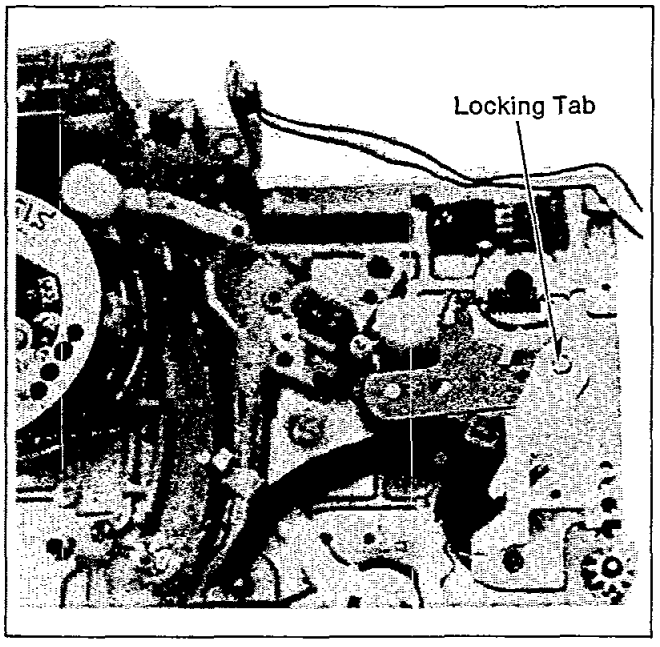


Fig. A17

2-3-18. REMOVAL OF THE PINCH CAM GEAR AND P5 ARM UNIT

1) Unlock the locking tab of the P5 STOPPER and remove the P5 STOPPER.
2) Remove the screw(J) and the cut washer.
3) Remove the P5 STOPPER BASE.
4) Remove the PINCH CAM GEAR and P5 ARM UNIT.

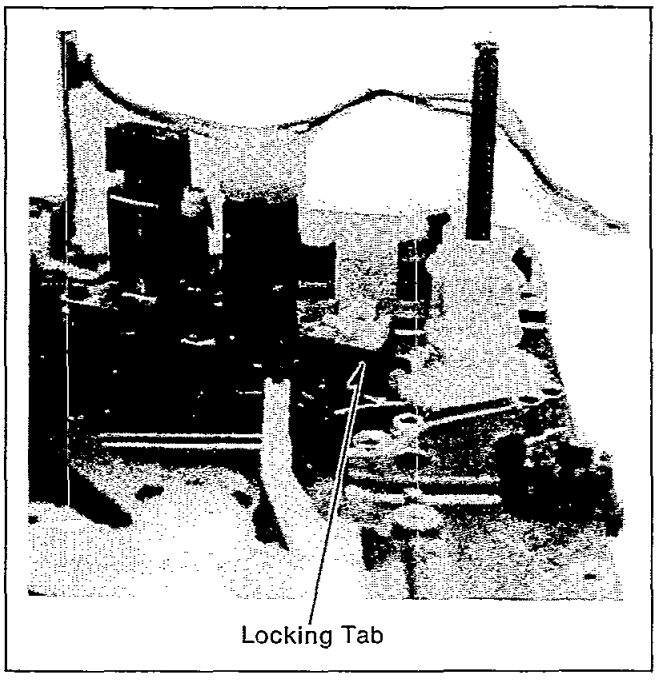


Fig. A18

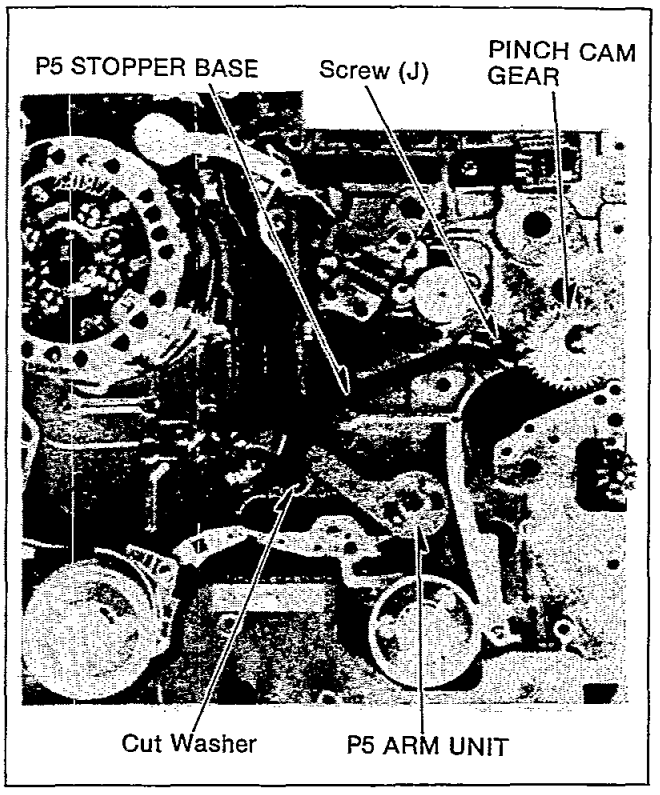


Fig. A19

2-3-19. REMOVAL OF THE TAKE-UP TENSION REGULATOR ARM UNIT

1) Disconnect the spring from the bottom of the chassis.
2) Unlock the locking tab and lift the TAKE-UP TENSION REGULATOR ARM UNIT off the shaft.

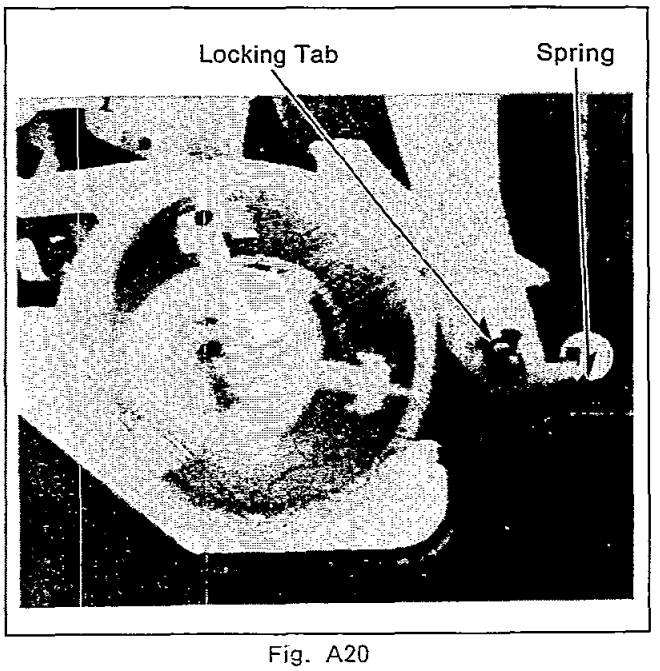


Fig. A20

2-3-20. REMOVAL OF THE CARRIAGE CONNECTION GEAR

1) Remove the cut washer.
2) Lift the CARRIAGE CONNECTION GEAR off the shaft.

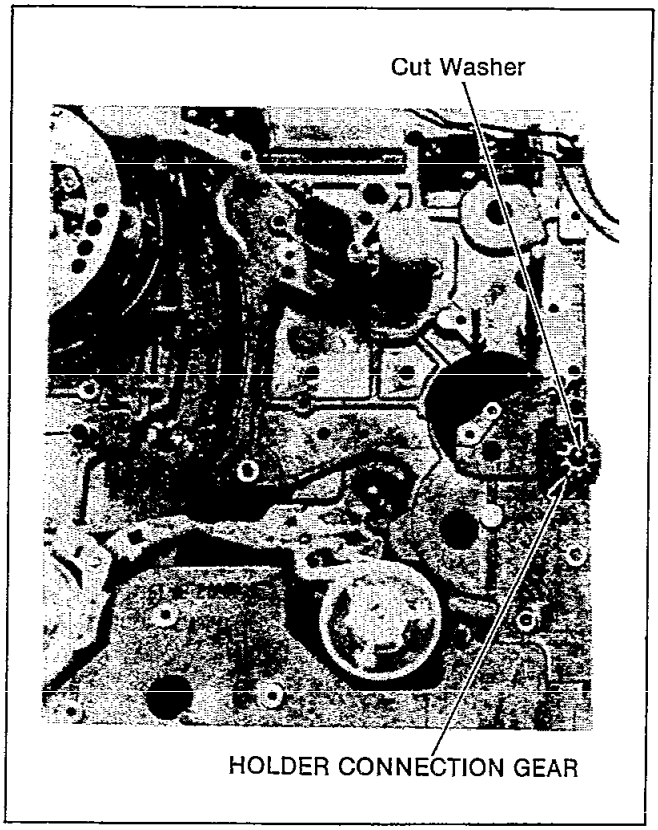


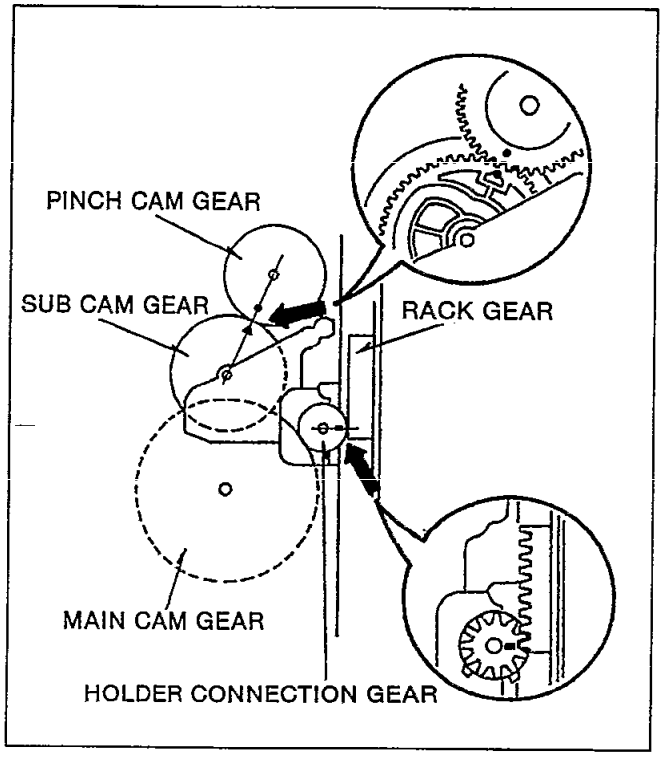
Fig. A21

2-4. ASSEMBLY PROCEDURES OF MECHANISM

2-4-1. VIEW OF PHASE ALIGNMENT

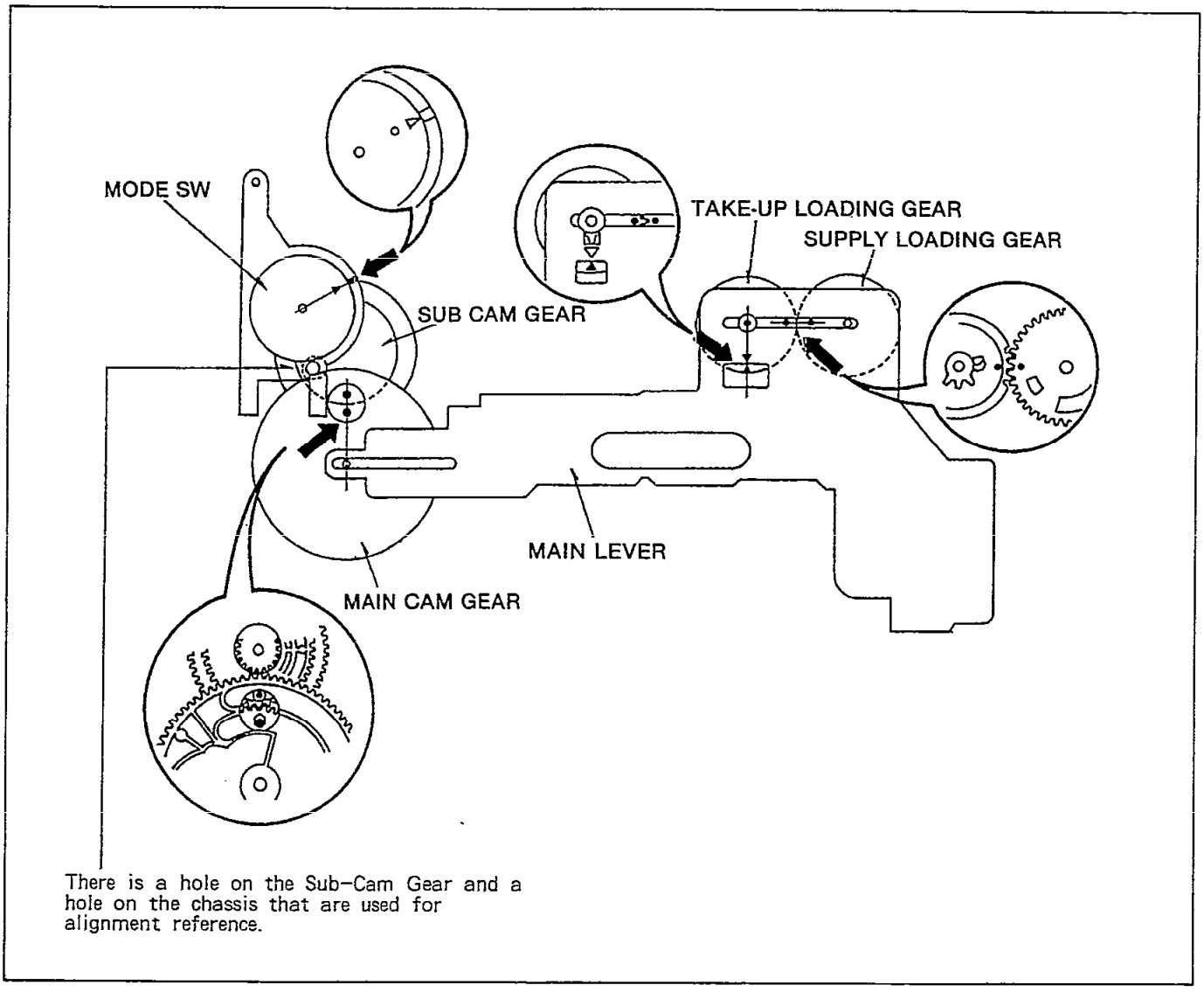
The gear phase alignment is performed in the cassette down position and is crucial for the K-Mechanism to operate correctly.

1) Top View of Gear Phase Alignment Marks.
There are alignment marks on the Pinch Cam Gear and Sub Cam Gear. There is one alignment mark on the carriage connection gear.



Top View of Gear Phase Alignment

2) Bottom View of Gear Phase Alignment Marks.
There are alignment marks on Take-up Loading Gear and Supply Loading Gear.
There is an additional mark on the Take-up Loading Gear that aligns with the mark on the main lever. There are alignment marks on the Main Cam Gear and the Sub Cam Gear. The mode switch gear mark aligns with a notch in the mode switch frame.


MODE SW
TAKE-UP LOADING GEAR
SUPPLY LOADING GEAR
SUB CAM GEAR
MAIN LEVER
MAIN CAM GEAR
There is a hole on the Sub-Cam Gear and a hole on the chassis that are used for alignment reference.

Bottom View of Gear Phase Alignment

2-4-2. ASSEMBLY OF THE CARRIAGE CONNECTION GEAR

1) Install the CARRIAGE CONNECTION GEAR as shown in Fig.A21.
2) Install the cut washer.

2-4-3. ASSEMBLY OF THE TAKE-UP TENSION REGULATOR ARM UNIT, P5 ARM UNIT PINCH CAM GEAR, P5 STOPPER BASE, P5 STOPPER, PINCH CAM UNIT AND OPENER PIECE

1) Install the TAKE-UP TENSION REGULATOR ARM UNIT.
2) Hook the spring to hole on the chassis.
3) Install the P5 ARM UNIT and PINCH CAM GEAR.
4) Install the P5 STOPPER BASE with cut washer and screw(J).
5) Install the P5 STOPPER, PINCH ARM UNIT and OPENER PIECE.

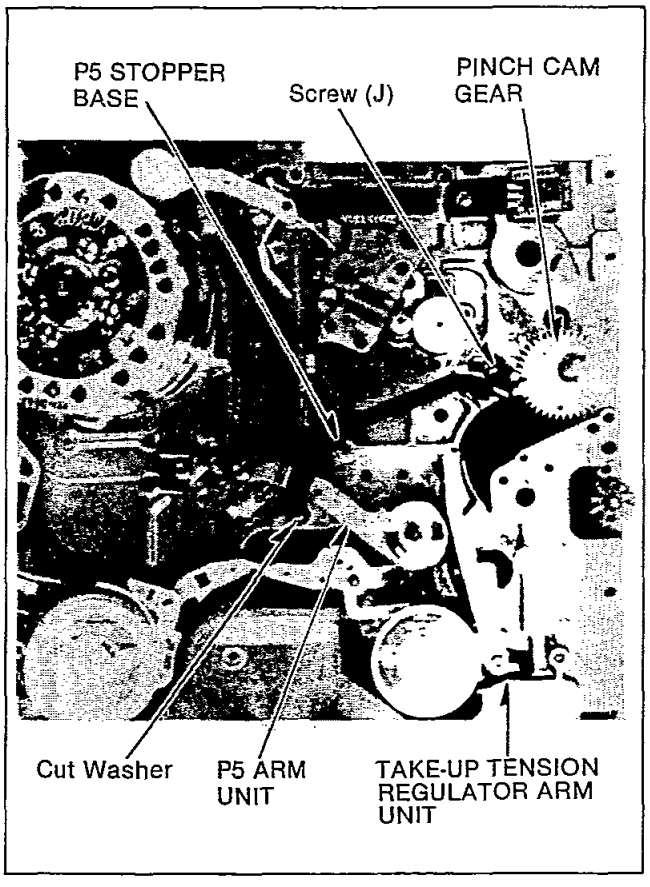


Fig. K1

2-4-4. ASSEMBLY OF THE IDLER ARM UNIT, TAKE-UP AND SUPPLY REEL GEARS, IDLER REGULATOR LEVER, CONNECTION LEVER UNIT AND CENTRE CLUTCH

1) Install the IDLER UNIT, TAKE-UP and SUPPLY REEL GEARs, IDLER REGULATOR LEVER and CONNECTION LEVER UNIT.
2) Install the CENTRE CLUTCH with cut washer.

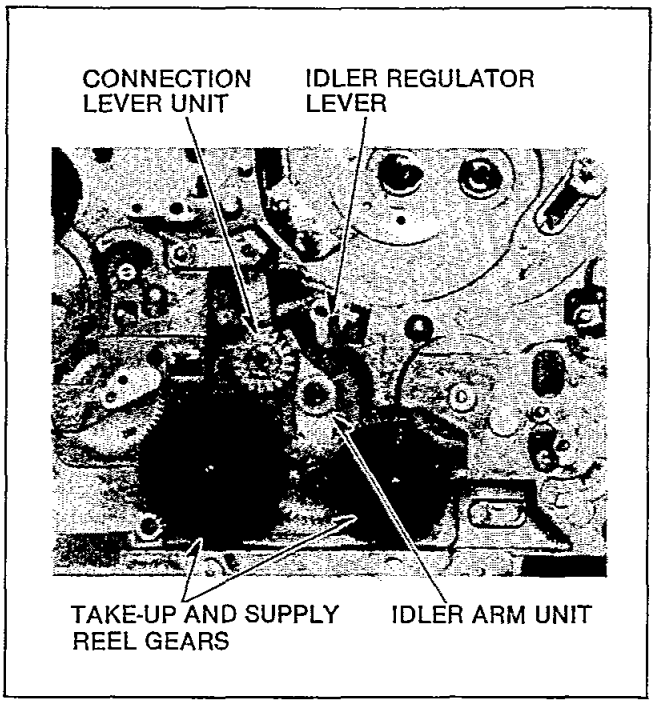


Fig. K2

2-4-5. ASSEMBLY OF THE SUB CAM GEAR

The SUB CAM GEAR is used for the reference of the phase.

1) Install the SUB CAM GEAR so that the chassis hole aligns with hole in the SUB CAM GEAR. Also, the hole in the outer gear of the SUB CAM GEAR must align with the hole in the PINCH CAM GEAR. The boss on the PINCH ARM must be installed in the cam groove of the SUB-CAM GEAR. This is used for the reference of the phase. To aid installation of the SUB-CAM GEAR insert a fixing pin into the holes of the SUB-CAM GEAR and the chassis.

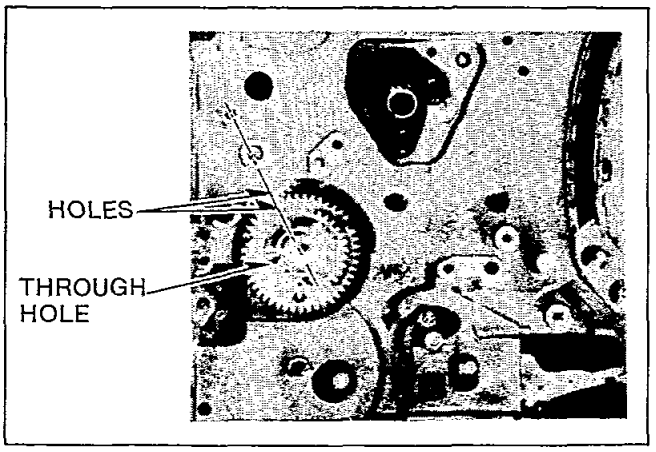


Fig. K3

2–4–6. ASSEMBLY OF THE STATOR UNIT

1) Place the STATOR UNIT into position. Loosely reinstall the 3 screws that secure the STATOR and HOUSING UNIT. Next insert the CENTERING PIN then tighten the 3 screws as shown in Fig.K4.

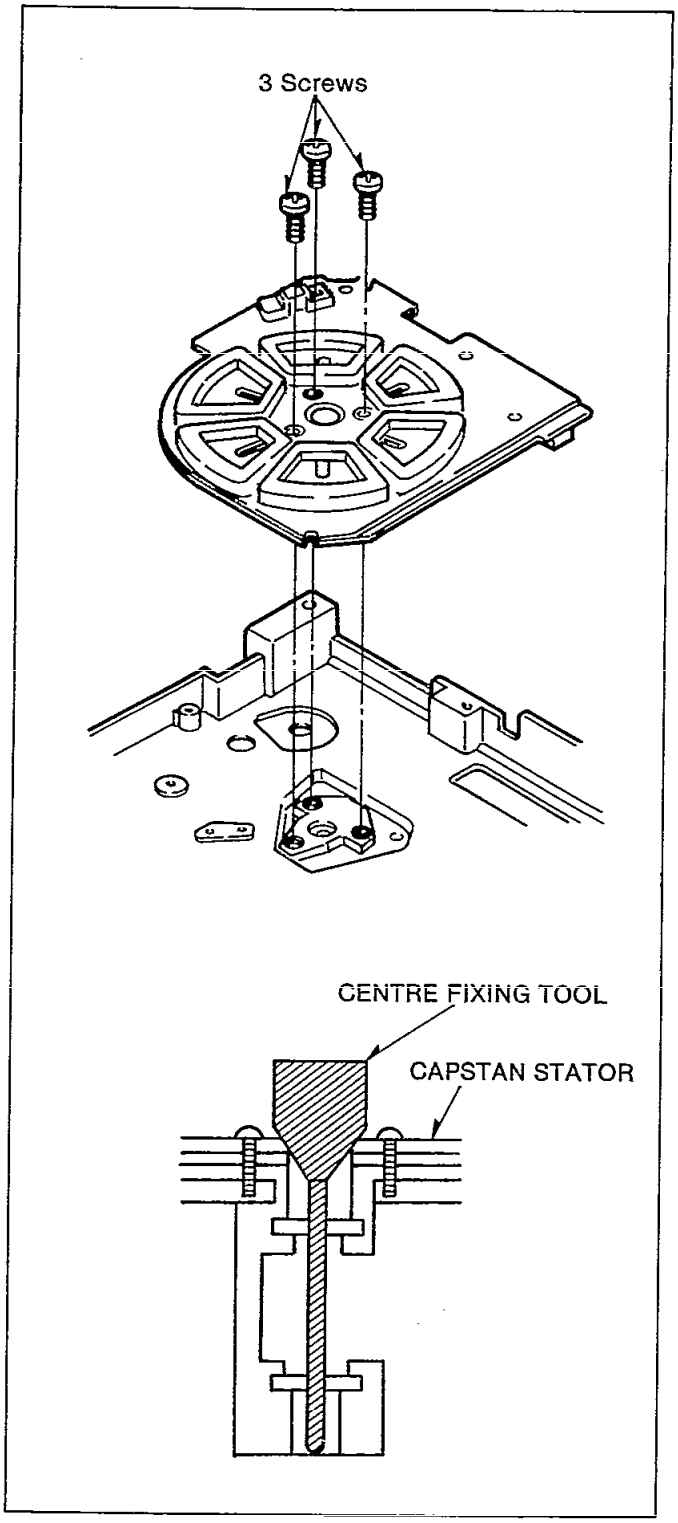


Fig. K4

2) Remove the oil seal from the ROTOR SHAFT Partially install the ROTOR SHAFT into the lower position and install the oil seal. Insert the ROTOR SHAFT further into the housing and install the second OIL SEAL in the upper position. Push the lower OIL SEAL down the ROTOR SHAFT into the housing.

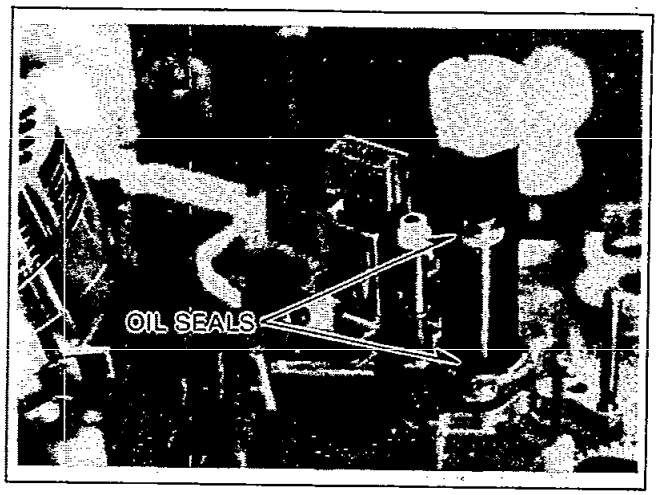


Fig. K5

3) Clean the ROTOR SHAFT after replacement. Reinstall the ROTOR STOPPER and the screw on the top side.

2–4–7. ASSEMBLY OF THE MAIN CAM GEAR

NOTE:
Before installing the MAIN CAM GEAR, set the CONNECTION GEAR so that the side of the gear with no teeth is towards the MAIN CAM GEAR.

1) Install the MAIN CAM GEAR so that the hole marker aligns with the SUB–CAM GEAR and insert the boss of the TAKE–UP TENSION REGULATOR ARM into the slot on the bottom of the MAIN CAM GEAR.

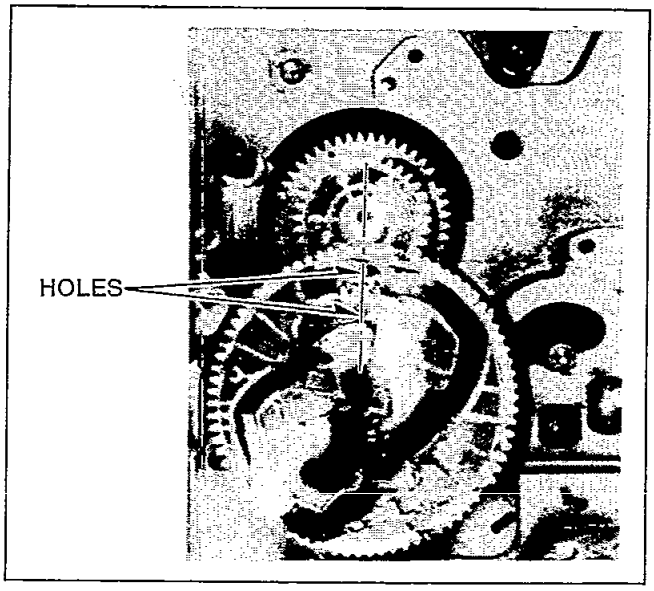


Fig. K6

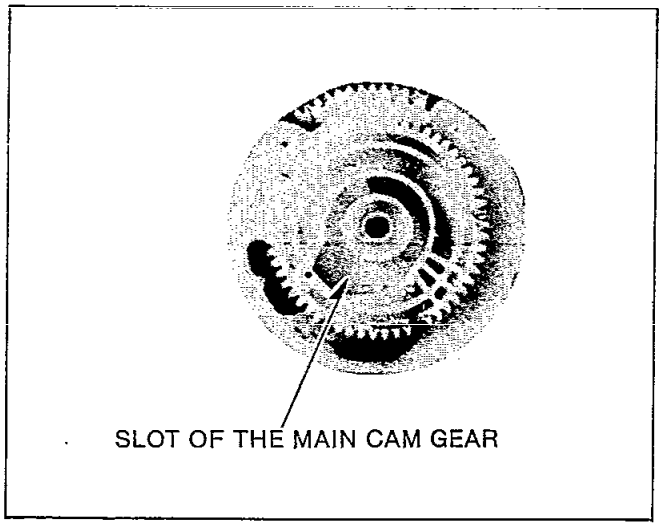


Fig. K7

2-4-8. ASSEMBLY OF THE MODE SW

1) Align the mark on the MODE SWITCH GEAR with the notch on the MODE SWITCH FRAME.
2) Install the MODE SWITCH taking care that all the phase alignments are correct. Check the CAM GEAR timing by rotating the MAIN CAM GEAR.
3) Install the screw(K) the retains the MODE SWITCH and ROTOR STOPPER.

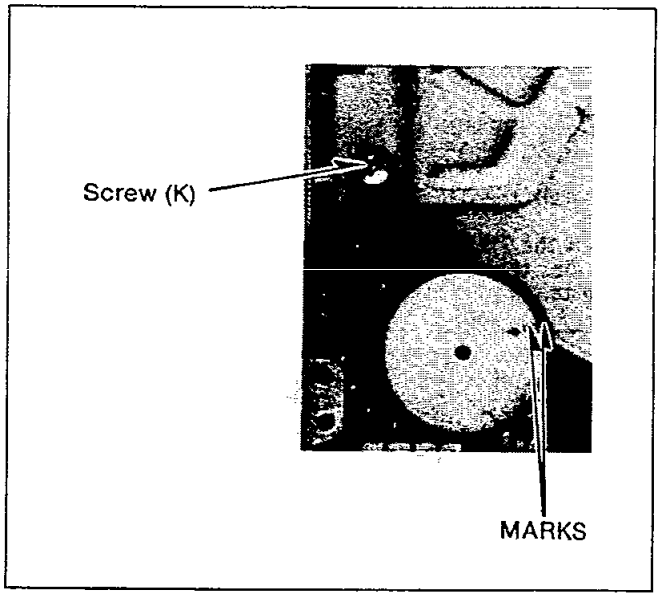


Fig. K8

2-4-9. ASSEMBLY OF THE T & S LOADING ARMS

1) Set the shaft holders to the unloaded position. Take care that the P5 POST does not interfere with the P3 Post or prevent it from going to the unloaded position. The TENSION ARM must be set to the position that will allow the P2 POST to move back to the unloaded position.

2) Install the TAKE-UP LOADING ARM and SUPPLY LOADING ARM, aligning the marks on the both GEARS.

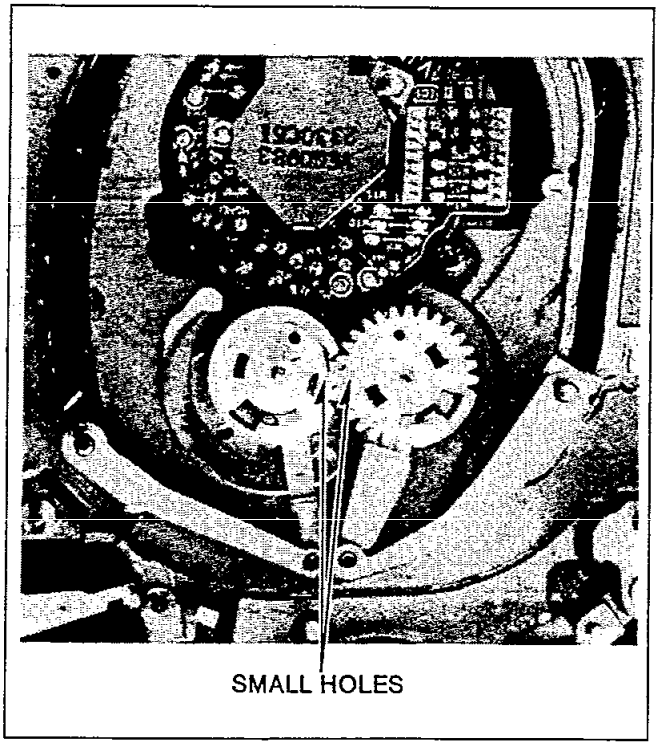


Fig. K9

2–4–10. ASSEMBLY OF THE MAIN LEVER

1) Install the MAIN LEVER ARM checking that the boss arms and shafts are in the correct position and the mark on the MAIN LEVER ARM is aligned with mark on the TAKE–UP LOADING GEAR.

2) Install the 2 cut washers.

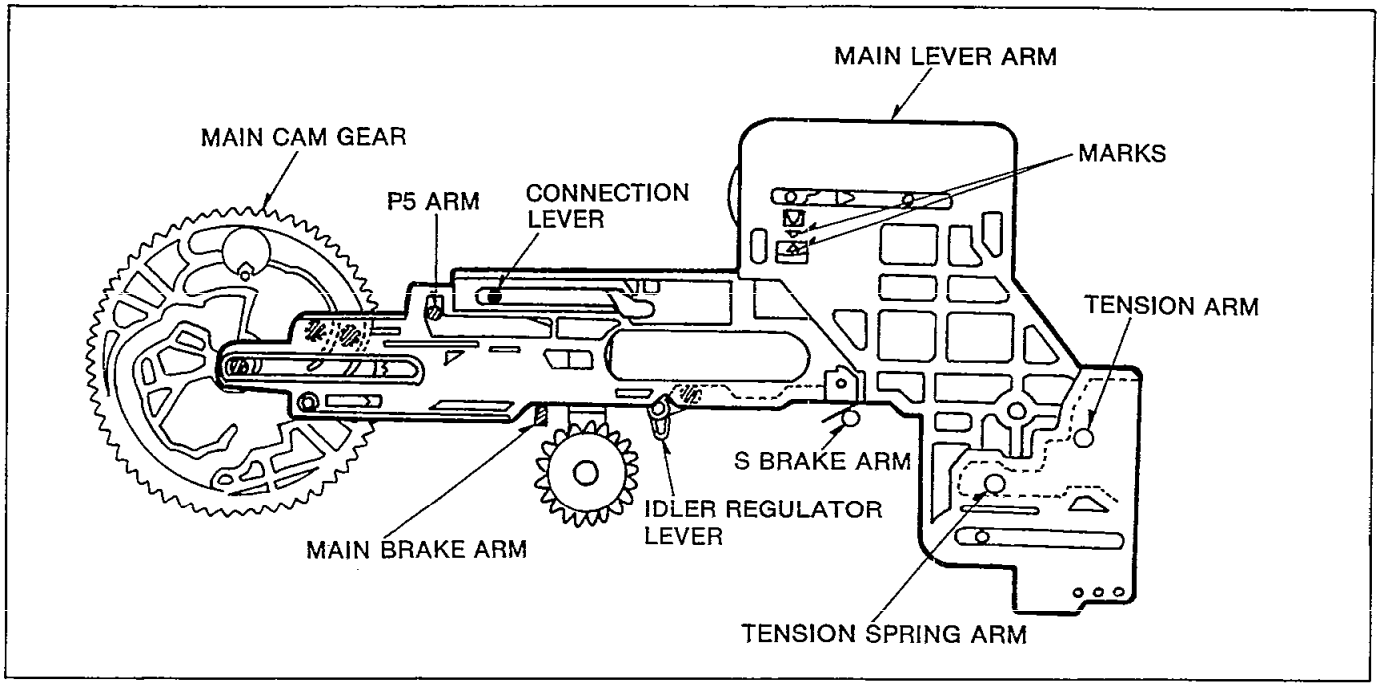


Fig. K10

2–4–11. ASSEMBLY OF THE WORM WHEEL GEAR & LOADING MOTOR BRACKET

1) Reinstall the WORM WHEEL GEAR.

2) Install the LOADING MOTOR BRACKET. First set the BRACKET over the MAIN CAM GEAR shaft and slide until it locks. Then push down on the BRACKET until the locking tab is connected to the chassis. Reinstall the screw(L).

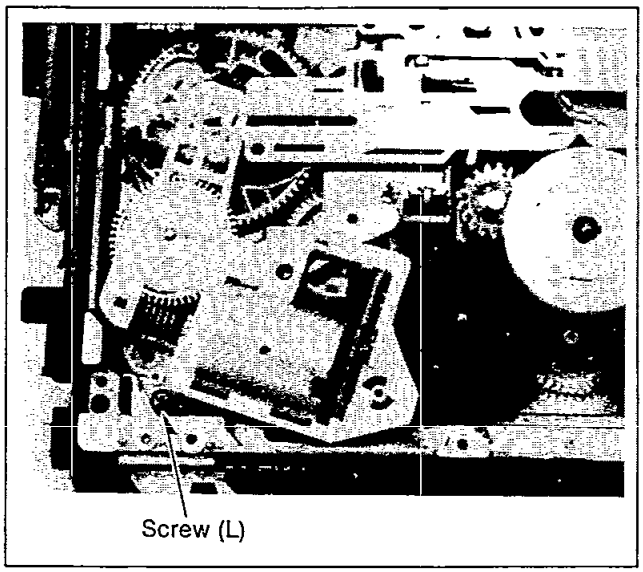


Fig. K11

2–4–12. ASSEMBLY OF THE TIMING BELT & SS BRAKE BASE

1) Install the TIMING BELT.

2) Put the TIMING BELT onto the TENSION ROLLER, slide the SS BRAKE BASE into position and install 2 screws(M).

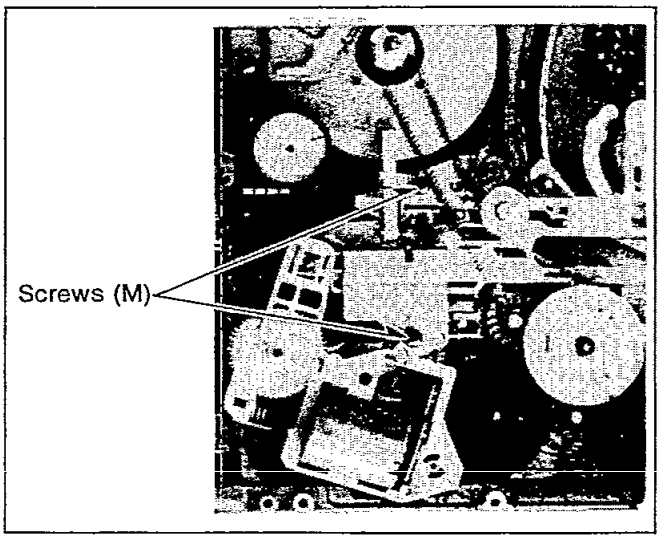


Fig. K12

2-4-13. ASSEMBLY OF THE PINCH ARM UNIT

1) Install the OPENER PIECE by inserting the boss into the PINCH ARM UNIT. Push down until the lock engages the shaft.

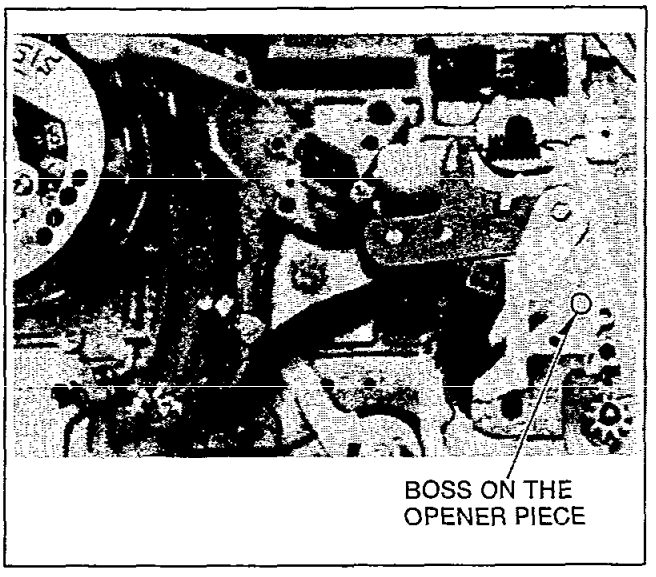


Fig. K13

2-4-14. CHECKING THE MECHANISM MOVEMENT

1) Check by moving the mechanism by hand then re-check using a battery to power the motor.

2) Rotate the LOADING MOTOR by hand in the loading direction while checking the movement of each gear. If the mechanism operates correctly when moved by hand, connect a battery to the LOADING MOTOR and re-check the movement of each gear as shown in Fig.S1/S2/S3.

3) Connect the battery to check the loading operation and then reverse the battery connection to check the unloading operation.

4) Reverse the battery to move the mechanism to the cassette down position.

2-4-15. ASSEMBLY OF THE CASSETTE HOLDER

1. A SSEMBLE A CASSETTE HOLDER AS A UNIT COMPLETE UNIT

1) Put the CASSETTE HOLDER into the cassette up condition by moving the WIPER ARM.
2) Turn the LOADING MOTOR by hand in the unloading direction until the CARRIAGE CONNECTION GEAR and the MODE SW is eject position as shown in Fig.K14/K15

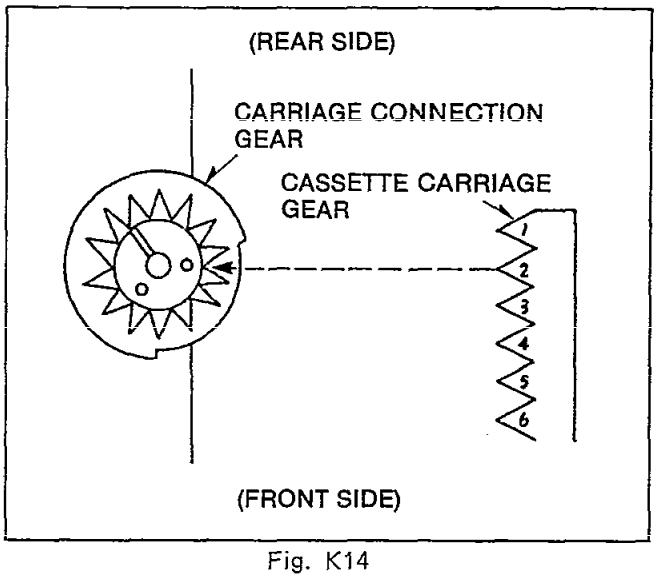


Fig. K14

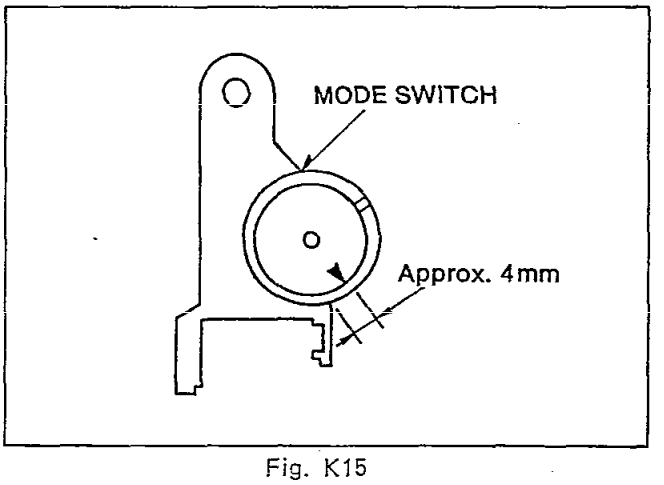


Fig. K15

3) Install the CASSETTE HOLDER UNIT as shown in Fig.K14.
4) Install 4 screws to attach the CASSETTE HOLDER UNIT.

<Eject Operation>

The main cam gear rotates in the direction of the arrow. The projection (B) of the carriage connection gear engages with the recession (A) of the main cam gear. The carriage connection gear rotates in the direction of the arrow to perform the Eject operation.

<NOTE>
If the Eject operation is performed without the cassette carriage installed while repairing or making the mechanical phase alignment, the main cam gear will not engage with the carriage connection gear will not rotate.
For performing the Eject operation with the cassette carriage not installed, it is necessary to rotate to the carriage connection gear by hand in the direction of the arrow.

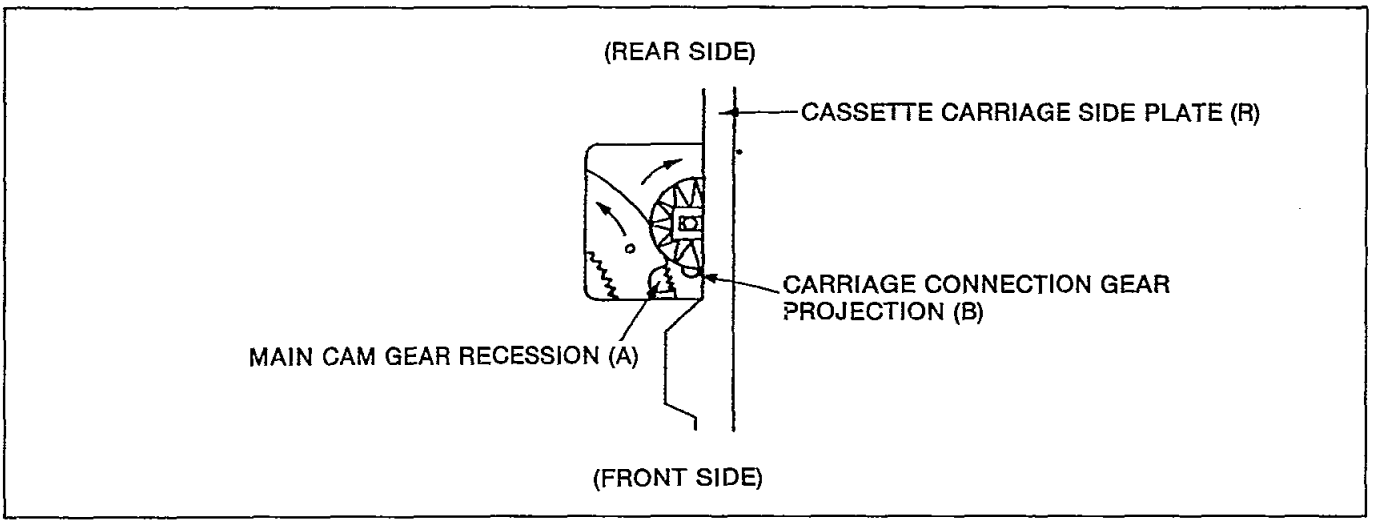


Fig. K16 Top View of Eject Operation

2. ASSEMBLE A CASSETTE HOLDER SEPARATELY

1) Put the CASSETTE HOLDER into the cassette down position by moving the WIPER ARM. Check the position of the WIPER ARM and RACK A. The mark of RACK A aligns with the mark on the WIPER ARM.

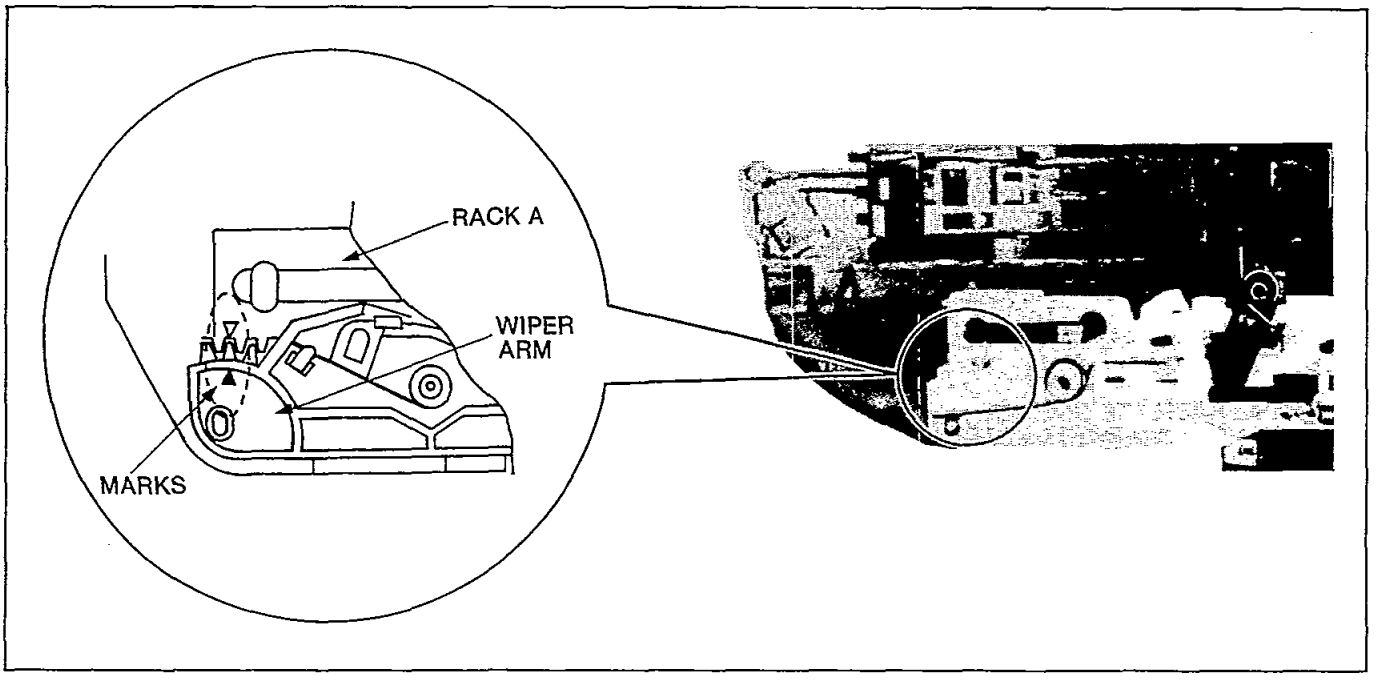


Fig. K17

2) Install the SIDE PLATE ASSEMBLY so that the first gear of RACK B aligns with the mark on the CARRIAGE CONNECTION GEAR.

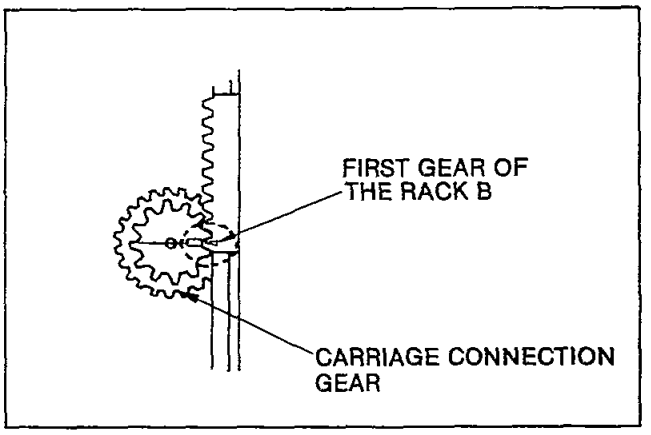


Fig. K18

3) Install 4 screws to attach the SIDE PLATE ASSEMBLY.

4) Turn the LOADING MOTOR by hand to the cassette up position while pushing the WIPER ARM to the cassette up position.

5) Insert the 5 posts on the CASSETTE HOLDER into the Side Plate.

6) Set the TOP PLATE on the Side Plate then push it down until it locks.

2-4-16. ASSEMBLY OF THE MECHANISM CHASSIS

1) Install the MECHANISM CONNECTION C.B.A. onto the chassis. Then install the chassis into the frame and connect all the cables and connectors.

2) Clean the DD CYLINDER after reinstallation.

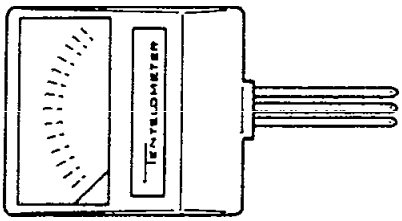
3) Insert a cassette and adjust the tape travel and check all the operation modes.

Servicing Fixtures & Tools

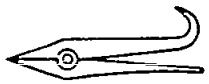
VFJ8125H3F
PAL VHS Alignment Tape

VFM8080HQFP
NTSC VHS Alignment Tape

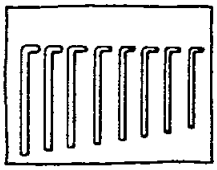
VFK0132
Back Tension Meter
(Tentelometer, Made in U.S.A.)



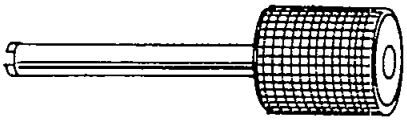
VFK0335
Retaining Ring Remover
(3mm/4mm)



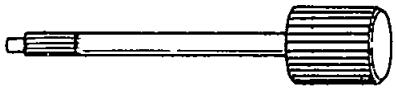
VFK0326
Hex. Wrench Set
(0.7, 0.9, 1.2, 1.5, 1.6, 2.0, 2.4, 3.0mm)



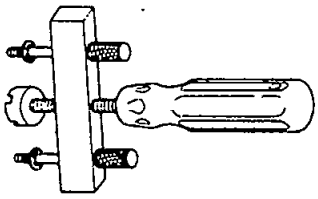
VFK0329
Post Adjustment Screw Driver



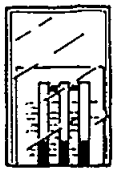
VFK0330
Fine Adjustment Gear Driver



VFK0341
Upper Cylinder Remover

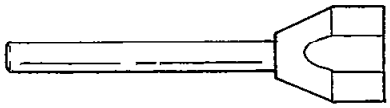


VFK27
Hand Cleaning Stick



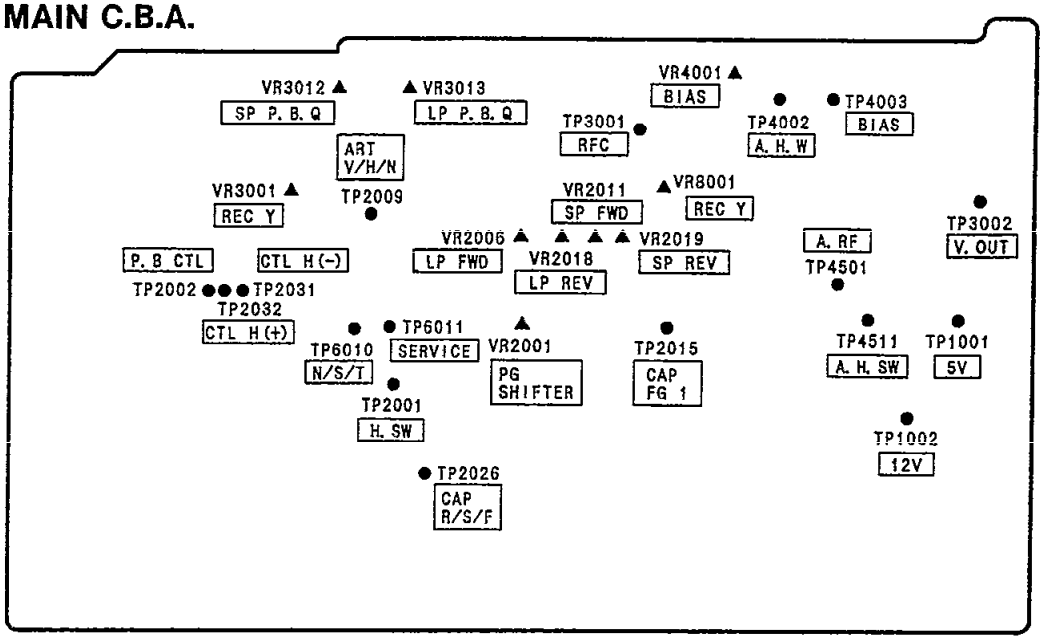
MOR265
Morlytone Grease

VFK0851
CENTRE FIXING TOOL

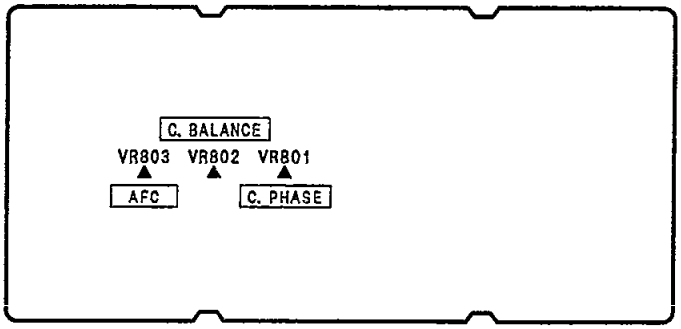


LOCATION OF TEST POINTS & CONTROLS

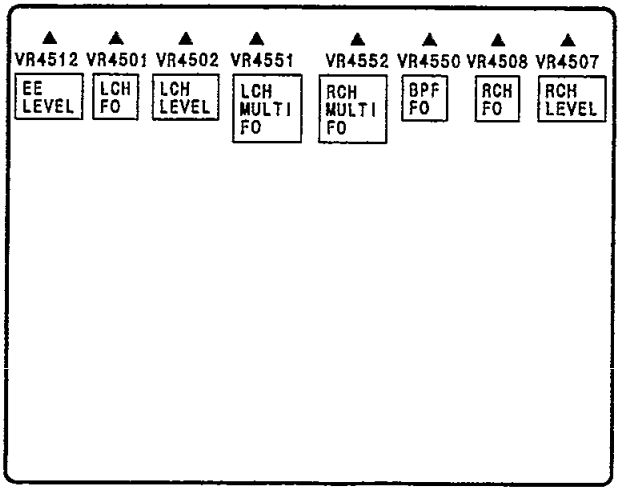
MAIN C.B.A.



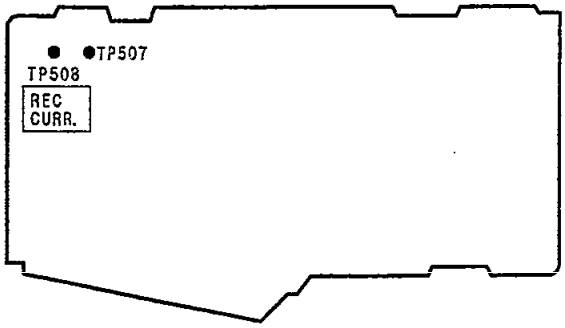
LUMINANCE & CHROMINANCE PACK C.B.A.



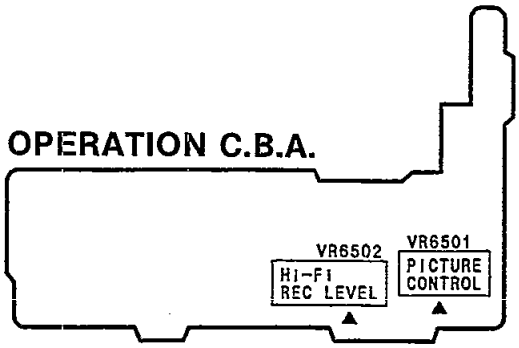
Hi-Fi AUDIO PACK C.B.A.



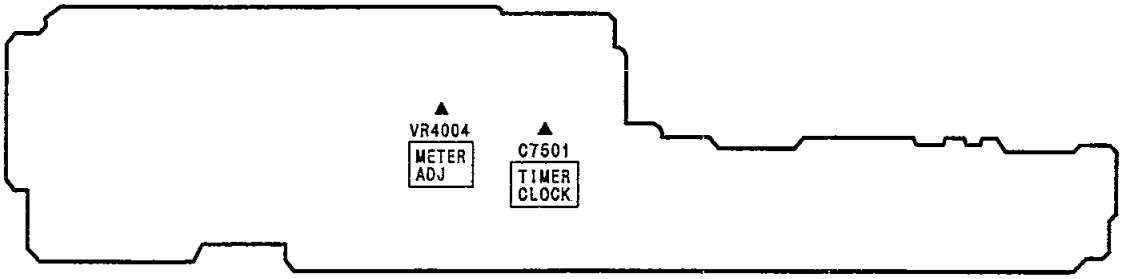
HEAD AMP C.B.A.



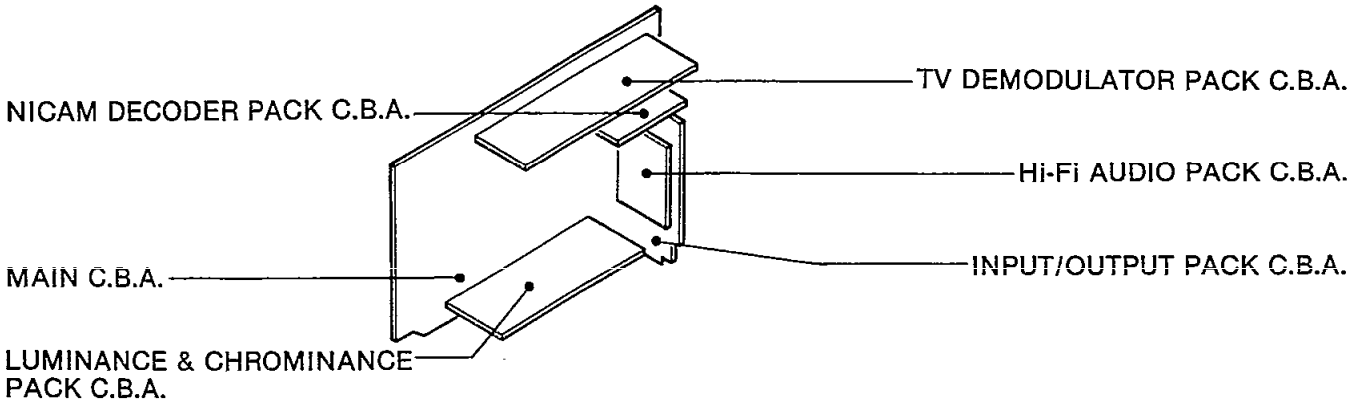
OPERATION C.B.A.

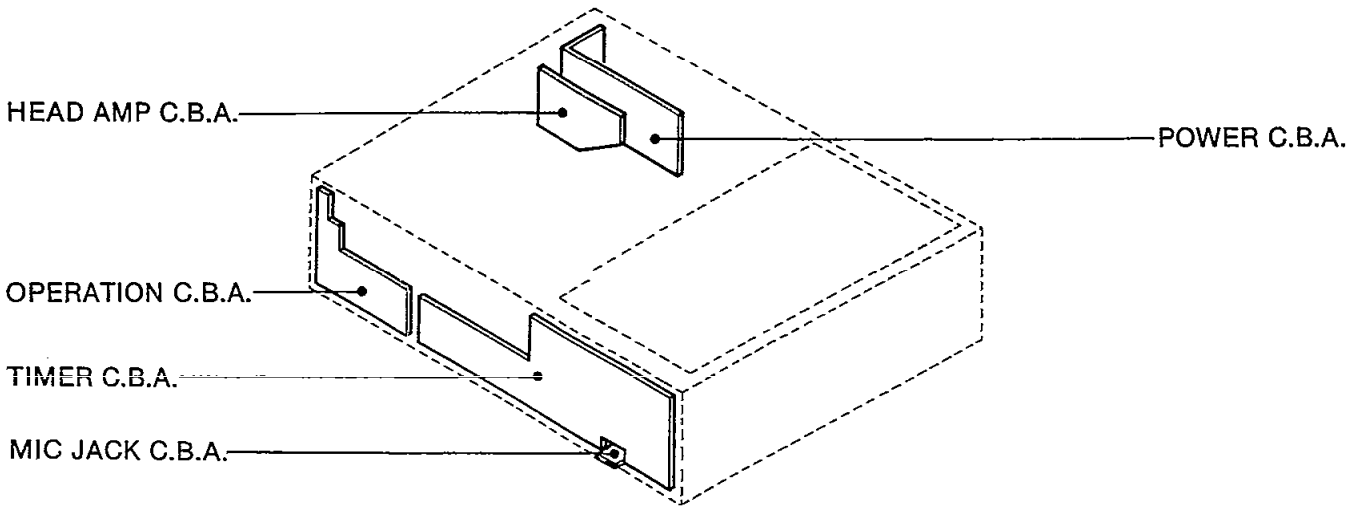


TIMER C.B.A.



CIRCUIT BOARD LAYOUT





2-5. ELECTRICAL ADJUSTMENT PROCEDURES

This section provides complete adjustment procedures required for electric circuits of VHS Video Cassette Recorders.

2-5-1. TEST EQUIPMENT

To perform electrical adjustments following equipment is required.

1. Dual-Trace Oscilloscope. (More than 35 MHz)
   Voltage Range: 0.005-5V/div
   Frequency Range: DC-35MHz
   Probes: 10:1
2. Frequency Counter.
   Frequency Range: 0-10MHz
   Probes: 1:1
3. Universal Counter.
4. Vacuum Tube Volt Meter. (V.T.V.M.)
5. Video Sweep Generator.
6. Sine Wave Generator.
7. Video Pattern Generator.
8. VHS Alignment Tape. (VFJ8125H3F)
9. VHS Blank Tape.
10. Monitor.
11. Plastic Tip Driver.

2-5-2. PREPARATION

During adjustment, set each selector as follows: when no indication in the procedure.

HIFI/NORMAL MIX SW.....OFF
TAPE SPEED.....SP
TEST SIG SW (REAR).....OFF
PICTURE VR.....FIX

2-5-3. HOW TO READ ADJUSTMENT PROCEDURES

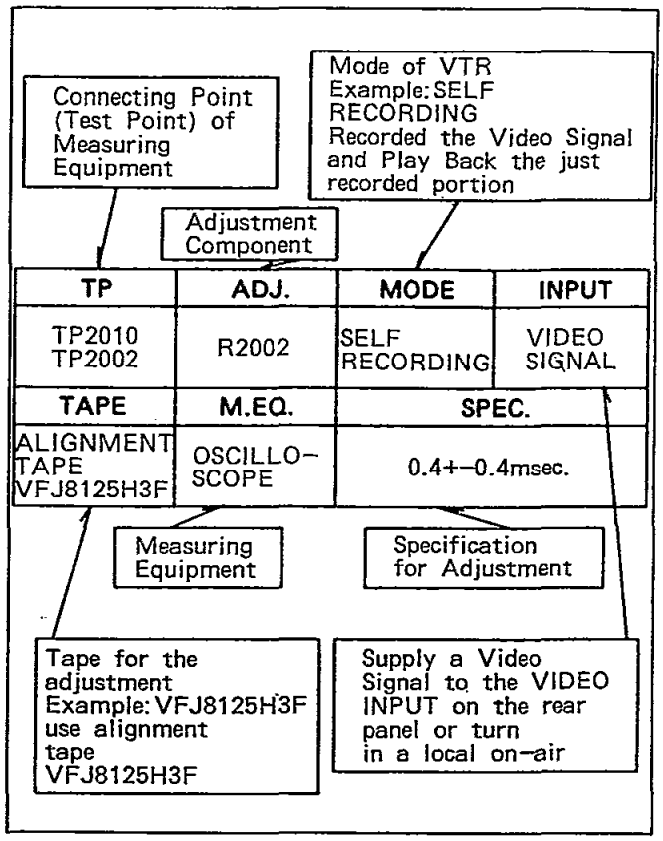


Fig. E1

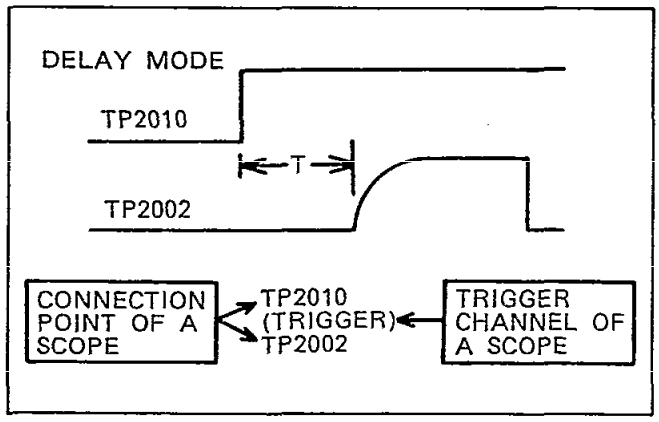


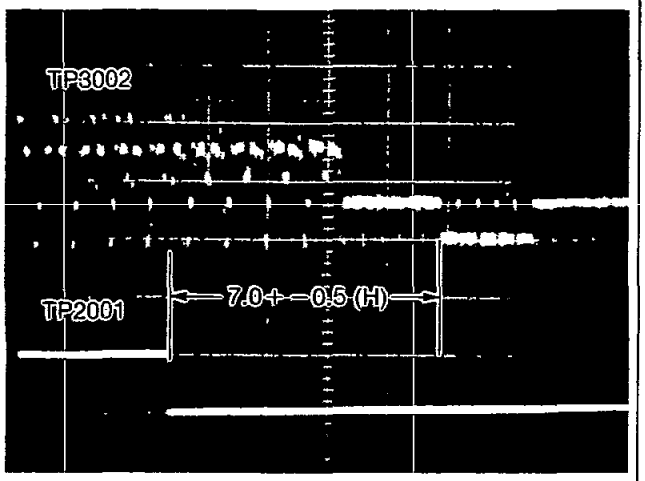
Fig. E2

SERVO SECTION

2-5-4. PG SHIFTER ADJUSTMENT

TP	ADJ.	MODE	INPUT
TP2001 TP3002	VR2001	PLAYBACK	
TAPE	**M. EQ.**	**SPEC.**	
ALIGNMENT TAPE VFJ8125H3F	OSCILLO-SCOPE	7.0+-0.5(H)	

1. Connect the oscilloscope to TP2001(H.SW) and TP3002(V.OUT)
2. Playback the alignment tape.
3. Adjust VR2001 until the phase difference between falling edge of Head SW pulse and V-Sync is 7.0+-0.5(H)



TP3002 VIDEO
TP2001 H. SW (TRIGGER)

Fig. E3

2-5-5. SLOW TRACKING ADJUSTMENT

TP	ADJ.	MODE	INPUT
MONITOR SCREEN	VR2011(SP) VR2006(LP)	SP (SELF RECORDED) STILL	COLOUR BAR
TAPE	**M. EQ.**	**SPEC.**	
BLANK TAPE	MONITOR TV	A=B (A+B)/V<1/6	

1. Connect a cut jumper wire as shown in Fig.E4.
2. Record the colour bar in SP(LP) mode for a few minutes and playback the just recorded portion.
3. Place the unit in SLOW mode by operating the Remote Controller Unit.
4. Adjust VR2011(SP)(VR2006(LP)) until noise bar on the monitor screen is minimized. (Detail specifications are shown in Fig.E5)
5. Disconnect a jumper wire.

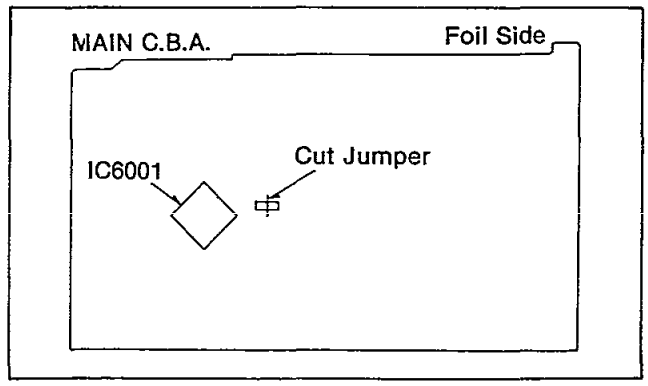


Fig. E4

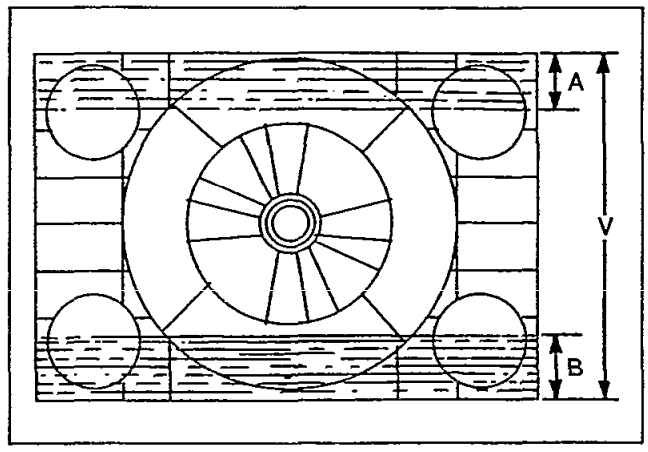


Fig. E5

2-5-6. REVERSE SLOW TRACKING ADJUSTMENT

TP	ADJ.	MODE	INPUT
MONITOR SCREEN	VR2019(SP) VR2018(LP)	REVERSE SLOW	COLOUR BAR
TAPE	**M. EQ.**	**SPEC.**	
BLANK TAPE	MONITOR	SP: A=B (A+B)/V=<1/6 LP: B=0 A/V=<1/12	

1. Connect a cut jumper wire as shown in Fig.E4.
2. Record the colour bar in SP(LP) mode for a few minutes and playback the just recorded portion.
3. Place the unit in SLOW mode by operating the Remote Controller Unit.
4. Adjust VR2019(SP)(VR2018(LP)) until noise bar on the monitor screen is minimized. (Detail specifications are shown in Fig.E5)
5. Disconnect the jumper wire.

LUMINANCE & CHROMINANCE SECTION

2-5-7. ARTIFICIAL NTSC AFC FREE RUN ADJUSTMENT

TP	ADJ.	MODE	INPUT
PIN (9) of IC802	VR803	STOP	SINEWAVE 8KHz −10dB (316mV)
TAPE	**M. EQ.**	**SPEC.**	
	FREQUENCY COUNTER SINEWAVE GENERATOR	15735+−100(Hz)	

Note: Supply +5V DC to Pin 27 of IC802.

1. Supply a sinewave (8KHz/−10dB) to Line In. (Video In)
2. Connect the frequency counter to Pin 9 of IC802.
3. Turn VR803 to maximum frequency.
4. Adjust VR803 until frequency is 15735+−100(Hz).

2-5-8. RECORDING CURRENT ADJUSTMENT

TP	ADJ.	MODE	INPUT
TP507(HOT) TP508(GND)	VR3001(Y) VR8001(C)	RECORDING	COLOUR BAR
TAPE	**M. EQ.**	**SPEC.**	
BLANK TAPE	OSCILLO-SCOPE	Y:130+−5(mVp−p) C:32+−2(mVp−p)	

1. Record the colour bar.
2. Connect the oscilloscope to TP507(HOT) and TP508(GND).
3. Adjust VR3001 so the amplitude of sync tip portion is 130+−5mVp−p.
4. Supply +5V DC to PP3001−6 to reduce luminance component.
5. Adjust VR8001 until the amplitude of Cyan is 32+−2mVp−p.

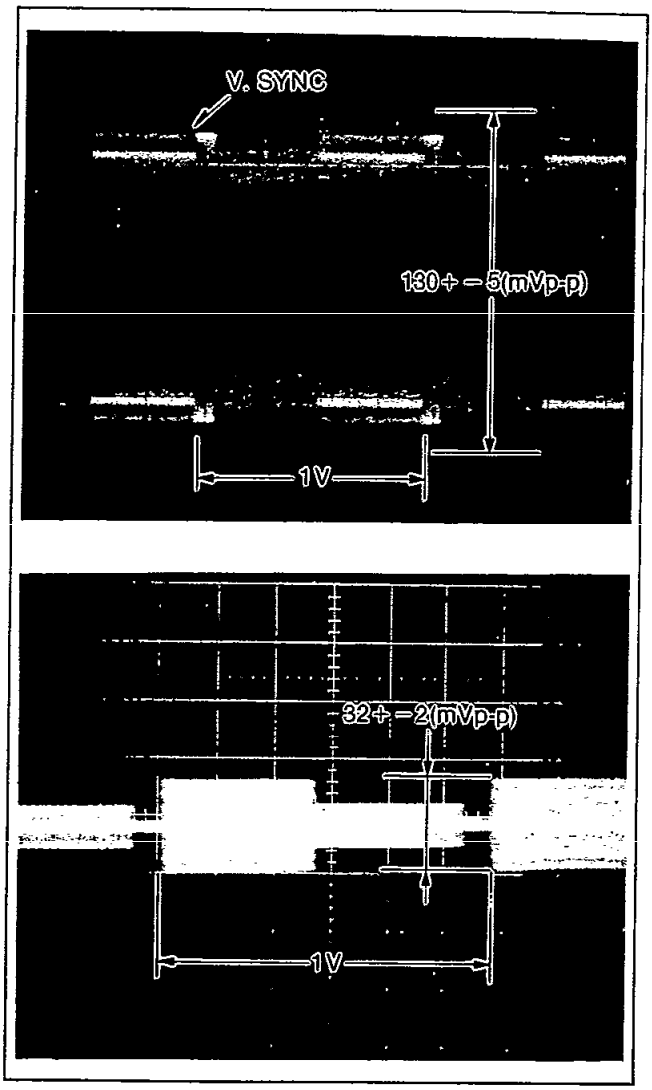


Fig. E6

2-5-9. VIDEO FREQUENCY RESPONSE ADJUSTMENT

TP	ADJ.	MODE	INPUT
TP3002	VR3012(SP) VR3013(LP)	(SELF RECORDED) PLAYBACK (SP/LP)	VIDEO SWEEP SIGNAL
TAPE	**M. EQ.**	**SPEC.**	
BLANK TAPE	OSCILLO-SCOPE VIDEO SWEEP GENERATOR	SP:0+−1(dB) (90 − 110%) LP:0+−1(dB) (90 − 110%)	

Note:
(1) Set the Video Sweep Signal as shown in Fig.E7.

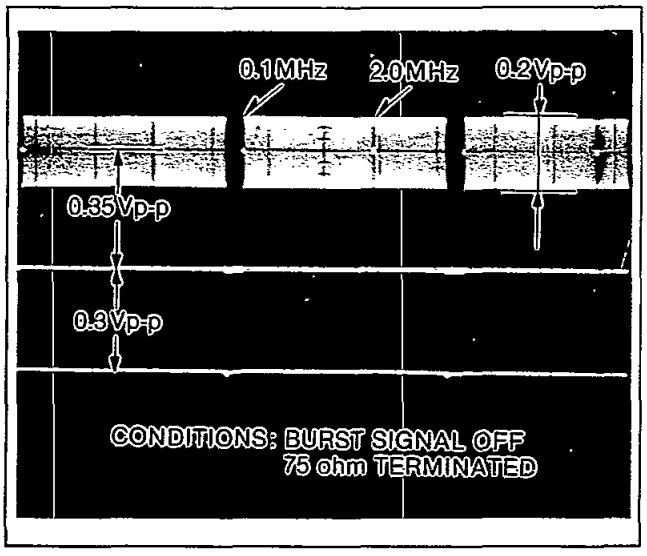


Fig. E7

1. Record the Video Sweep Signal in SP/(LP) mode for a few minutes and playback the just recorded signal.
2. Connect the oscilloscope to TP3002.
3. Adjust VR3012(SP)(VR3013(LP)) until the frequency response level is 0+−1dB at 2MHz portion by comparing with 0.1MHz portion.

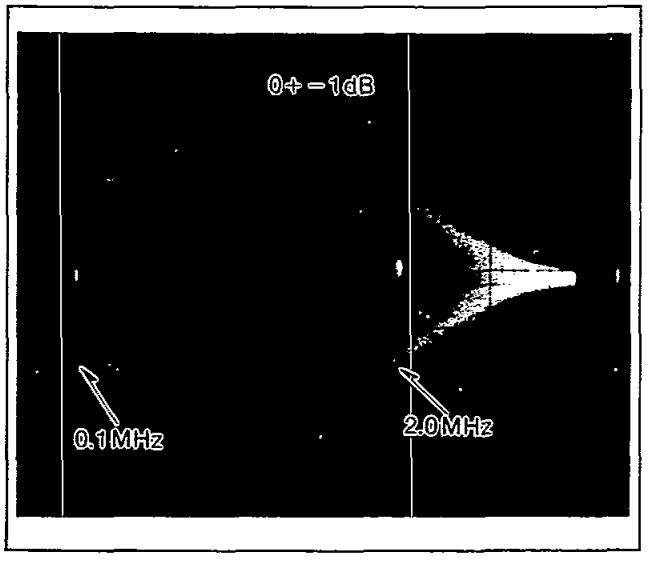


Fig. E8

2-5-10. CHROMINANCE RECURSIVE ADJUSTMENT

TP	ADJ.	MODE	INPUT
IC301-17	VR801 VR802	SELF REC&PB	COLOUR BAR
TAPE	**M. EQ.**	**SPEC.**	
BLANK TAPE	OSCILLO- SCOPE	MINIMIZE AMPLITUDE	

1. Record the color bar and play back the just recorded portion.
2. Adjust VR801 and VR802 until the amplitude of the signal at the Pin 17 of IC301 is minimum.

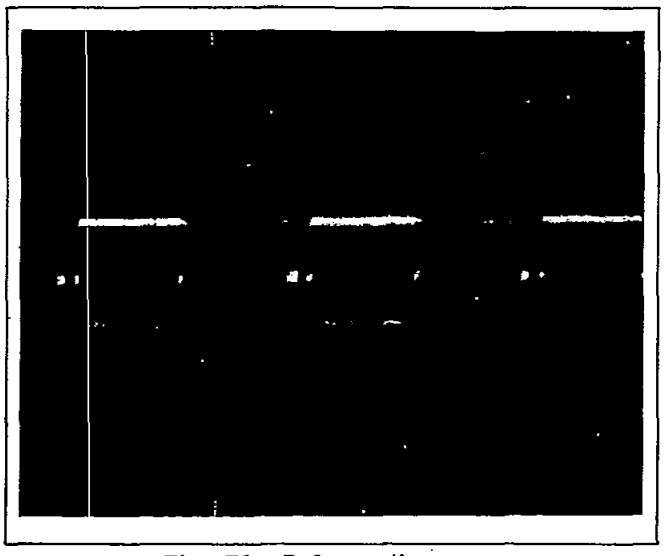


Fig. E9 Before adjustment.

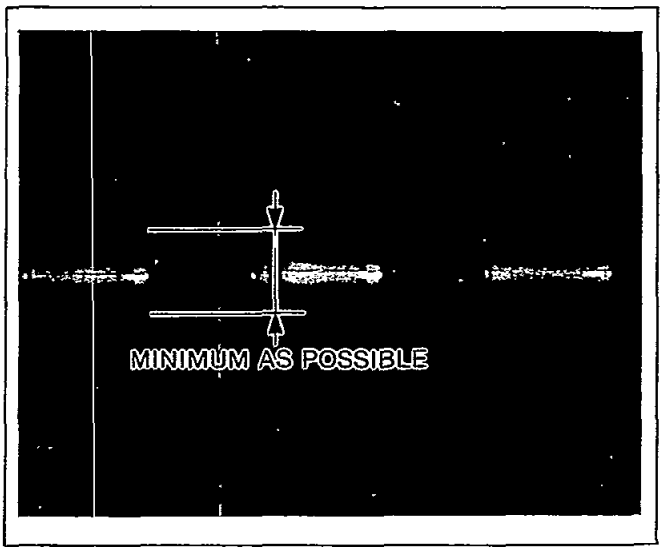


Fig. E10 After adjustment.

AUDIO SECTION

2-5-11. BIAS CURRENT ADJUSTMENT

TP	ADJ.	MODE	INPUT
TP4002 (HOT) TP4003 (GND)	VR4001	RECORDING	
TAPE	**M. EQ.**	**SPEC.**	
BLANK TAPE	V.T.V.M.	3.0+-0.1(mVrms)	

Note:
Connect the Audio input and GND.

1. Place the unit in SP recording mode.
2. Connect the V.T.V.M. to TP4002(HOT) and TP4003(GND).
3. Adjust VR4001 so reading of V.T.V.M. is 3.0+-0.1mVrms.

2-5-12. Hi-Fi E-E LEVEL ADJUSTMENT

TP	ADJ.	MODE	INPUT
LINE OUT	VR4512	STOP	1kHz, -10dB AUDIO SIG.
TAPE	**M. EQ.**	**SPEC.**	
BLANK TAPE	SINEWAVE GENERATOR / V.T.V.M.	380-420(mVrms)	

1. Select the STEREO mode by Remote Controller. (Both Left and Right indicators on the FIP are lit)
2. Supply the sinewave (1kHz/-10dB) to Audio input (L) terminal.
3. Connect the V.T.V.M. to Audio Output (L) terminal.
4. Adjust VR4512 so that the level becomes 380 - 420 mVrms.

2-5-13. CARRIER FREQUENCY ADJUSTMENT

TP	ADJ.	MODE	INPUT
IC4501-34 (L) IC4501-47 (R)	VR4551 VR4552	SP RECORDING	
TAPE	**M. EQ.**	**SPEC.**	
BLANK TAPE	FREQUENCY COUNTER	PAL-L: 1.4+-0.003 (MHz) PAL-R: 1.8+-0.003 (MHz)	

1. Place the unit in SP recording mode.
2. Connect the frequency counter to IC4501-34.
3. Adjust VR4551 until the frequency is 1.4+-0.003MHz.
4. Connect the frequency counter to IC4507-47.
5. Adjust R4552 until the frequency is 1.8+-0.003MHz.

2-5-14. DEVIATION ADJUSTMENT

TP	ADJ.	MODE	INPUT
BETWEEN VR4502 and R4511 (L) BETWEEN VR4507 and R4561 (R)	VR4502 (L) VR4507 (R)	SP RECORDING	1kHz, -10dB AUDIO SIGNAL
TAPE	**M. EQ.**	**SPEC.**	
BLANK TAPE	VTVM/ SINEWAVE GENERATOR	120 (mVrms)	

1. Set the output level of the Signal Generator to 1kHz/-10dB and supply it to both audio input terminals (L) and (R).
2. Adjust the recording level (Line output) with Hi-Fi Rec Level VR on the front panel until both audio outputs (L) and (R) are 400mVrms (VTVM).
3. Connect the VTVM between VR4502 and R4511.
4. Adjust VR4502 until the level is 120mVrms.
5. Connect the VTVM between VR4507 until the level is 120mVrms.

AUDIO SECTION

2-5-11. BIAS CURRENT ADJUSTMENT

TP	ADJ.	MODE	INPUT
TP4002 (HOT) TP4003 (GND)	VR4001	RECORDING	
TAPE	**M. EQ.**	**SPEC.**	
BLANK TAPE	V.T.V.M.	3.0+—0.1(mVrms)	

Note:
Connect the Audio input and GND.

1. Place the unit in SP recording mode.
2. Connect the V.T.V.M. to TP4002(HOT) and TP4003(GND).
3. Adjust VR4001 so reading of V.T.V.M. is 3.0+—0.1mVrms.

2-5-12. Hi-Fi E-E LEVEL ADJUSTMENT

TP	ADJ.	MODE	INPUT
LINE OUT	VR4512	STOP	1kHz, —10dB AUDIO SIG.
TAPE	**M. EQ.**	**SPEC.**	
BLANK TAPE	SINEWAVE GENERATOR / V.T.V.M.	380—420(mVrms)	

1. Select the STEREO mode by Remote Controller. (Both Left and Right indicators on the FIP are lit)
2. Supply the sinewave (1kHz/—10dB) to Audio Input (L) terminal.
3. Connect the V.T.V.M. to Audio Output (L) terminal.
4. Adjust VR4512 so that the level becomes 380 — 420 mVrms.

2-5-13. CARRIER FREQUENCY ADJUSTMENT

TP	ADJ.	MODE	INPUT
IC4501— 34 (L) IC4501— 47 (R)	VR4551 VR4552	SP RECORDING	
TAPE	**M. EQ.**	**SPEC.**	
BLANK TAPE	FREQUENCY COUNTER	PAL—L: 1.4+—0.003 (MHz) PAL—R: 1.8+—0.003 (MHz)	

1. Place the unit in SP recording mode.
2. Connect the frequency counter to IC4501—34.
3. Adjust VR4551 until the frequency is 1.4+—0.003MHz.
4. Connect the frequency counter to IC4507—47.
5. Adjust R4552 until the frequency is 1.8+—0.003MHz.

2-5-14. DEVIATION ADJUSTMENT

TP	ADJ.	MODE	INPUT
BETWEEN VR4502 and R4511 (L) BETWEEN VR4507 and R4561 (R)	VR4502 (L) VR4507 (R)	SP RECORDING	1kHz, —10dB AUDIO SIGNAL
TAPE	**M. EQ.**	**SPEC.**	
BLANK TAPE	VTVM/ SINEWAVE GENERATOR	120 (mVrms)	

1. Set the output level of the Signal Generator to 1kHz/—10dB and supply it to both audio input terminals (L) and (R).
2. Adjust the recording level (Line output) with Hi-Fi Rec Level VR on the front panel until both audio outputs (L) and (R) are 400mVrms (VTVM).
3. Connect the VTVM between VR4502 and R4511.
4. Adjust VR4502 until the level is 120mVrms.
5. Connect the VTVM between VR4507 until the level is 120mVrms.

SECTION 3
SCHEMATIC DIAGRAMS

3-1. ABBREVIATIONS

443NT [L]	4.43 NTSC Ⓛ	BIL. [H]	BILINGUAL Ⓗ
A. COMP	AUDIO COMPONENT SIGNAL	BIL/M1 [L]	BILINGUAL Ⓛ
A. COMPO	AUDIO COMPONENT SIGNAL	BS CLOCK	BS CLOCK
A. D.P [L]	AUDIO DUBBING PAUSE Ⓛ	BS DATA	BS DATA
A. D/L [L]	AUDIO DUBBING PAUSE Ⓛ	BS LCH IN	BS L CHANNEL INPUT
A. DEF [S]	AUDIO DEFEAT	BS MIX [H]	BS MIX Ⓗ
A. DEF [S] [L]	AUDIO DEFEAT	BS MON [H]	BS MONITOR Ⓗ
A. DUB P [L]	AUDIO DUBBING PAUSE Ⓛ	BS MONI [H]	BS MONITOR Ⓗ
A. DUB [H]	AUDIO DUBBING Ⓗ	BS RCH IN	BS R CHANNEL INPUT
A. ERASE	AUDIO ERASE	BS VIDEO	BS VIDEO SIGNAL
A. H. SW	AUDIO HEAD SWITCHING PULSE	BS VIDEO/BS1	BS VIDEO SIGNAL
A. HEAD [R]	AUDIO HEAD (REC)	BS [H]	BS Ⓗ
A. HEAD [W]	AUDIO HEAD (PLAY)	BS. LEVEL	BS LEVEL
A. IN [L]	AUDIO INPUT (L)	BS. M [H]	BS MONITOR Ⓗ
A. IN [R]	AUDIO INPUT (R)	BS/VTR [H]	BS/VTR Ⓗ
A. MUT [H]	AUDIO MUTE Ⓗ	BUS CLK	BUS CLOCK
A. MUTE [H]	AUDIO MUTE Ⓗ	BUS LSN	BUS LISTEN
A. OUT [L]	AUDIO OUTPUT (L)	BUS TLK	BUS TALK
A. OUT [R]	AUDIO OUTPUT (R)	BUZZER	BUZZER
A. RF OUT	AUDIO RF SIGNAL OUTPUT	CAP EC	CAPSTAN TORQUE CONTROL
A/VS/S. DATA	AV SW/SERIAL DATA	CAP M GND	CAPSTAN MOTOR GND
AC ONLINE	AC ONLINE	CAP. ET	CAPSTAN TORQUE CONTROL
AC. O/EE. H	AC ONLINE/EE Ⓗ	CAP. FG1	CAPSTAN FG1 PULSE
AFC S C	AFC S CURVE	CAP. FG2	CAPSTAN FG2 PULSE
AFC [S]	AFC S CURVE	CAS. SW	CASSETTE SW
AFC. DEF	AFC DEFEAT	CCN	PLAYBACK CONTROL SIGNAL (−)
ARFC OUT	AUDIO RF SIGNAL OUTPUT	CCP	PLAYBACK CONTROL SIGNAL (+)
ART. V	ARTIFICIAL VERTICAL SYNC SIGNAL	CHM	CONTROL SIGNAL (+)
ART. V. MM	ARTIFICIAL VERTICAL SYNC SIGNAL MONO MULTI	CHP	CONTROL SIGNAL (−)
		CINEM [L]	CINEMA Ⓛ
ART. V/H/N	ARTIFICIAL VERTICAL SYNC SIGNAL Ⓗ/NORMAL	CINEMA [L]	CINEMA Ⓛ
		CINEMA/MIX	CINEMA/MIX
AT. V/H/N	ARTIFICIAL VERTICAL SYNC SIGNAL	CKL	RATCH LOCK
ATSW/TEST/NOR/SE	TEST/NORMAL/SERVICE	CKS	SHIFT LOCK
AUDIO IN [L]	AUDIO INPUT (L)	CL	CLOCK
AUDIO IN [R]	AUDIO INPUT (R)	CLK	CLOCK
AUDIO OUT [L]	AUDIO OUTPUT (L)	CLK (C.G)	CLOCK
AUDIO OUT [R]	AUDIO OUTPUT (R)	CLOCK. IN	CLOCK INPUT
AUDIO SELECT [H]	AUDIO SELECT Ⓗ	CLP	CLAMP
AUDIO. L	AUDIO (L)	COL/B/W/NOR	COLOUR/BLACK & WHITE/NORMAL
AUDIO. R	AUDIO (R)	COLOR [H]	COLOUR Ⓗ
AV CNT	AV CONTROL	CONV	CONVERTOR
AV CTL	AV CONTROL	CS	CHIP SELECT
AV CTL/S. CLK	AV CONTROL/SERIAL CLOCK	CTL GND	CONTROL GND
AV. C.M.	AV CONTROL MODE	CTL HEAD [+]	CONTROL HEAD (+)
AVCNT/METER. R	AV CONTROL/LEVEL METER (R)	CTL HEAD [−]	CONTROL HEAD (−)
AVSW/METER. L	AV SW/LEVEL METER (L)	CTL [+]	CONTROL HEAD (+)
B MODE. H	B MODE Ⓗ	CTL [−]	CONTROL HEAD (−)
B.G.P	BURST GATE PULSE	CUE BIAS	CUE BIAS
BACKUP 5V	BACK UP 5V	CURRENT LIM	CURRENT LIMMITER
BAND. U.E.	BAND U	CYL ET	CYLINDER TORQUE CONTROL
BANDVL. D	BAND VL	CYL GND	CYLINDER GND
BI/MI [L]	BILINGUAL/MIX Ⓛ	D.F.M. REC [H]	DELAIED FM RECORDING Ⓗ
BIL	BILINGUAL	D. FM REC [L]	DELAIED FM RECORDING Ⓛ
BIL [L]	BILINGUAL Ⓛ	D. GND	DIGITAL GND

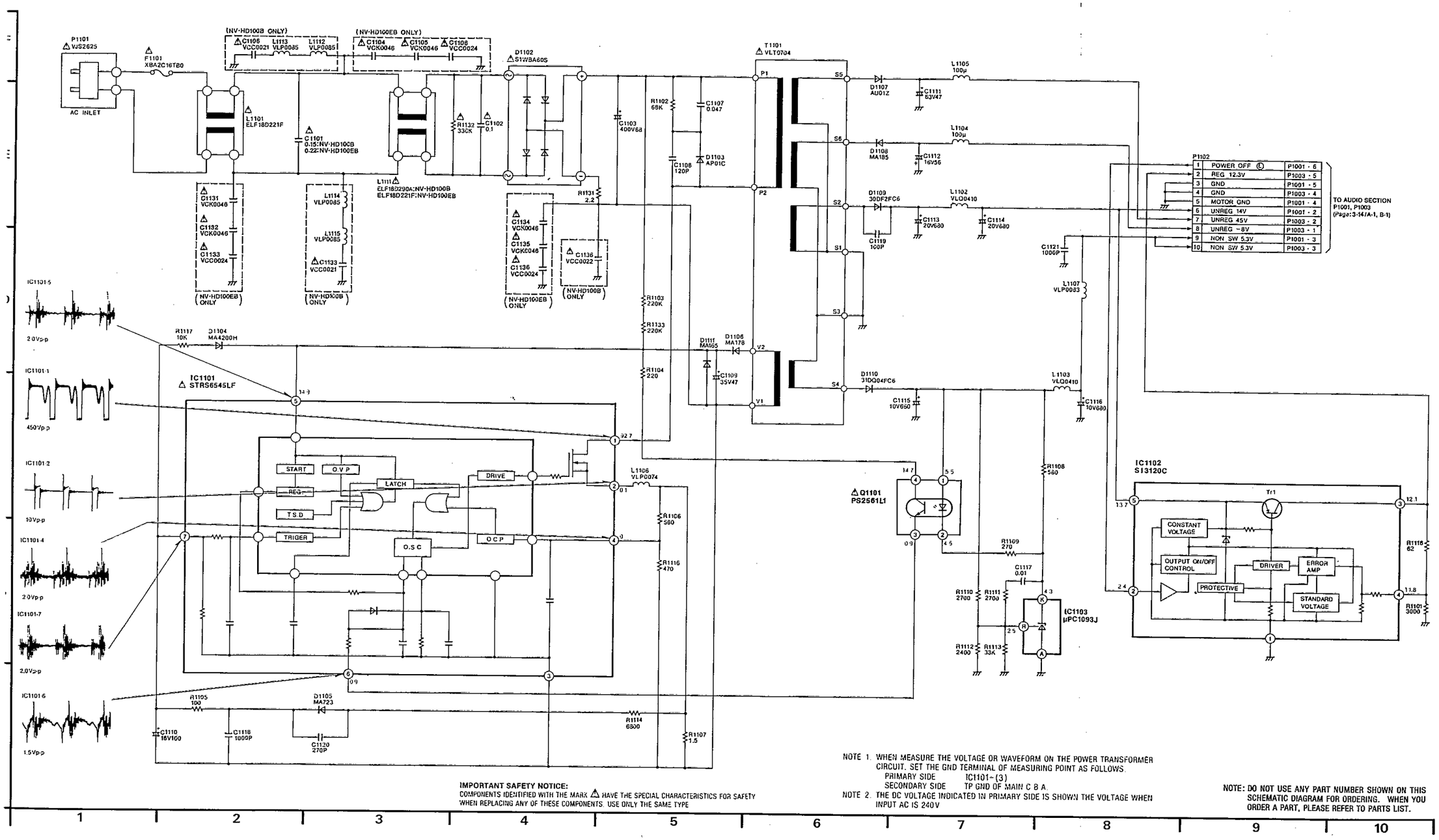
ABBREVIATIONS

D. REC [H]	DELAYED RECORDING Ⓗ	H. SYNC	HORIZONTAL SYNC
D4/S. LED	D4/STILL LED	H. AMP. SW	HEAD AMP SW PULSE
D4/STILLED	D4/STILL LED	H. P <R>	HEAD PHONE (R)
DAC [CLK]	TUNER DAC (CLOCK)	H. P <L>	HEAD PHONE (L)
DAC/FSCS	TUNER DAC/FS CHIP SELECT	H. P GND	HEAD PHONE GND
DAREC [H]	DELAYED AUDIO RECORDING Ⓗ	H. P OUT [L]	HEAD PHONE OUTPUT (L)
DATA	DATA	H. P OUT [R]	HEAD PHONE OUTPUT (R)
DECODER [L]	DECODER (L)	H. SW	HEAD SW PULSE
DECODER [R]	DECODER (R)	HEAD PHONE [L]	HEAD PHONE (L)
DEW	DEW	HEAD PHONE [R]	HEAD PHONE (R)
DEW SNS	DEW SENSOR	HEAD SW	HEAD SW
DFMRE [H]	DELAYED FM AUDIO RECORDING Ⓗ	HEATER [+]	HEATER (+)
E. REC 5V	EXCEPT RECORDING 5V	HEATER [−]	HEATER (−)
EC	ERR0R TORQUE CONTROL	HSS	HORIZONTAL SYNC SIGNAL
ECR	ERROR TORQUE CONTROL	HTR [+]	HEATER (+)
	REFERENCE VOLTAGE	HTR [−]	HEATER (−)
EDT TRIG [L]	EDIT TRIGGER Ⓛ	I RFE	REFERENCE CURRENT
EDIT [H]	EDIT Ⓗ	ICL	CONTROL AGC CIRCUIT
EE [H]	EE Ⓗ	IF	INTERMEDIATE FREQUENCY
EE [H]/INS [M]	EE Ⓗ/INSERT Ⓜ	IN SELA1	INPUT SELECT A1 POSITION
EE. VV. TR	EE/VV/TRICK PLAY	IN SELA2	INPUT SELECT A2 POSITION
EJECT. PO	EJECT POSITION	IN SELA3	INPUT SELECT A3 POSITION
EJECT/VDET	EJECT/REVERSE SLOW LOCK	INS L/R [L]	INSERT Lch/Rch Ⓛ
ENV. SEL	ENVELOPE SELECT	INS. [H]	INSERT Ⓗ
ENVE. OUT	ENVELOPE OUTPUT	INSEL A1	INPUT SELECT A1 POSITION
ENVE. SEL	ENVELOPE SELECT	INSEL A2	INPUT SELECT A2 POSITION
ENV SELECT	ENVELOPE SELECT	INSERT	INSERT
EP [H]	LP Ⓗ	INSERT [H]	INSERT Ⓗ
EP/LP [H]	LP Ⓗ	IO CS	INPUT/OUTPUT CHIP SELECT
EP/LP/SP	LP/SP	JOG1	JOG1
EP/SS [H]	LP/SLOW/STILL/STOP Ⓗ	JOG S3 LED/FOWRD	JOG LED/FORWARD LED
EPROMCS	EPROM CHIP SELECT	JOG/F. LED	JOG LED/FORWARD LED
EX. REC 5V	EXCEPT RECORDING 5V	JSB [H]	JSB Ⓗ
FF/REW [L]	FIRST FORWARD/REWIND Ⓛ	JST. CLCK	JUST CLOCK
FG1 IN	FG1 PULSE INPUT	JST. CLK	JUST CLOCK
FG2 IN	FG2 PULSE INPUT	JST. CLOCK	JUST CLOCK
FILTER ADJUSTMEN	FILTER ADJUSTMENT	L. OUT	Lch OUTPUT
FLY ERASE [H]	FLYING ERASE HEAD ON Ⓗ	L. CH [H]	Lch Ⓗ
FLY ON [H]	FLYING ERASE E HEAD ON Ⓗ	L. CH [L]	Lch Ⓛ
FLY. E [H]	FLYING ERASE HEAD ON Ⓗ	LED (MAIN)	LED (MAIN)
FM MUT [H]	FM AUDIO MUTE Ⓗ	LED (STEREO)	LED (STEREO)
FM MUTE [H]	FM AUDIO MUTE Ⓗ	LED (SUB)	LED (SUB)
FM OUT [L]	FM OUTPUT (L)	LED CKL	LED SERIAL CLOCK
FM OUT [R]	FM OUTPUT (R)	LED CKS	LED SERIAL CLOCK
FM PACK OUT [L]	FM PACK OUTPUT (L)	LED DATA	LED SERIAL DATA
FM PACK OUT [R]	FM PACK OUTPUT (R)	LINE IN 1 [L]	LINE INPUT 1 (L)
FM/BS SEL [L]	FM/BS SELECT (L)	LINE IN 1 [R]	LINE INPUT 1 (R)
FM/BS SEL [R]	FM/BS SELECT (R)	LINE IN 2 [L]	LINE INPUT 2 (L)
FS. CLK	FS CLOCK	LINE IN 2 [R]	LINE INPUT 2 (R)
FUL. E [H]	FULL ERASE HEAD ON Ⓗ	LINE IN V	LINE INPUT VIDEO
FULL. E [H]	FULL ERASE HEAD ON Ⓗ	LINE IN [L]	LINE INPUT (L)
FULL. E. 12V	FULL ERASE 12V	LINE IN [R]	LINE INPUT (R)
GND [A]	GND (ANALOGUE)	LINE OUT [L]	LINE OUTPUT (L)
GND [TU]	GND (TUNER)	LINE OUT [R]	LINE OUTPUT (R)
GND/N. SW. 12V	GND/NON SW 12V	LP [H]	LP Ⓗ

LPTRI [L]	LP TRICK PLAY Ⓛ	P. OFF [L]	POWER OFF Ⓛ
Lch/A. DUB	Lch/AUDIO DUBBING	PAL [H]	PAL Ⓗ
M GND	MOTOR GND	PAL [L]/NTSC [H]	PAL Ⓛ/NTSC Ⓗ
M REG	MOTOR REGULATOR	PB ADJ OUT	PLAYBACK ADJUST OUTPUT
MAIN OUT	MAIN OUTPUT	PB OUT	PLAYBACK OUTPUT
MAIN [L]	MAIN Ⓛ	PB. H	PLAYBACK Ⓗ
MAIN/MONO	MAIN/MONAURAL	PFG	PG/FG
MAX IN	MAXIMAM INPUT	PHOTSN +B	PHOTO SENSOR +B
MES [H]	MESECAM Ⓗ	PICT. CNT	PICTURE CONTROL
MESE [H]	MESECAM Ⓗ	PLAY LED/RVS LED	PLAY LED/REVERSE LED
MESE [L]	MESECAM Ⓛ	PLAY. PO	PLAY POSITION
METER 5V	LEVEL METER 5V	PLAY/R. LED	PLAY LED/REVERSE LED
METER [L]	LEVEL METER (L)	PLY/DEW	PLAY/DEW Ⓗ
METER [R]	LEVEL METER (R)	POWER OFF [L]	POWER OFF Ⓛ
METER. L/AVS	LEVEL METER (L)	PREROLL [H]	PREROLL Ⓗ
METER. R/AVC	LEVEL METER (R)	PWRFAIL	POWER FAILURE DETECT
MI/BI [L]	MIX Ⓗ/BILIGUAL	R. CH [H]	Rch Ⓗ
MIC GND	MIC GND	R. CH [L]	Rch Ⓛ
MIC IN	MIC INPUT	R. ST	RESET
MIC IN [L]	MIC INPUT (L)	R/S/F	REVERSE Ⓗ/STOP Ⓜ/FORWARD Ⓛ
MIC IN [R]	MIC INPUT (R)	RCH [H]	Rch Ⓗ
MIC [H]	MIC Ⓗ	REC 12V	RECORDING 12V
MIX [H]	MIX Ⓗ	REC CHROMA	RECORDING CHROMINANCE SIGNAL
MIX [H]/CINEMA [L]	MIX Ⓗ/CINEMA SOUND Ⓛ	REC H	RECORDING Ⓗ
MIX/CINE	MIX Ⓗ/CINEMA SOUND Ⓛ	REC IN	RECORDING INPUT
MIX/CINEMA [L]	MIX Ⓗ/CINEMA SOUND Ⓛ	REC OUT [L]	RECORDING OUTPUT Ⓛ
MN. H/M. L	MONAURAL Ⓗ/MAIN Ⓛ	REC START	RECORDING START
MN. H/MAI. L	MONAURAL Ⓗ/MAIN Ⓛ	REC VR [C]	RECORDING VOLUME (COMMON)
MN2/MES. L	MONAURAL 2/MESECAM Ⓛ	REC VR [L]	RECORDING VOLUME (L)
MODE SEL	AUDIO MODE SELECT	REC VR [R]	RECORDING VOLUME (R)
MODE SW	AUDIO MODE SW	REC Y	RECORDING LUMINANCE SIGNAL
MODE. S. IN	AUDIO MODE SELECT INPUT	REC [H]	RECORDING Ⓗ
MODE. S. OUT	AUDIO MODE SELECT OUTPUT	REC. C	RECORDING CHROMINANCE SIGNAL
MONO [H]	MONAURAL Ⓗ	REC. Y	RECORDING LUMINANCE SIGNAL
MONO [H]/MAIN [L]	MONAURAL Ⓗ/MAIN Ⓛ	REC/EE CTL	RECORDING/EE CONTROL
MONO2 [L]	MONAURAL 2	REEL-T	REEL PULSE (TAKE-UP)
MONO2/MESE [FM(L)]	MONAURAL 2/MESECAM (FM Ⓛ)	REEL-S	REEL PULSE (SUPPLY)
MOTOR GND	MOTOR GND	REGULATOR FILTER	REGULATOR FILTER
MUTE	MUTE	RESET	RESET
N. A. REC [L]	NORMAL AUDIO RECORDING	REV M F/R	REVIEW MOTOR FORWARD/REVERSE
N. SW 12V	NON SW 12V		
N. SW. 5. DET	NON SW 5V DETECT	REV M V1	REVIEW MOTOR V1
NICAM	NICAM	REV M V2	REVIEW MOTOR V2
NICAM [L]	NICAM Ⓛ	REV MOTOR F/R	REVIEW MOTOR FORWARD/REVERSE
NOL [H]	PAL Ⓗ/4.43 NTSC Ⓜ/3.58 NTSC Ⓛ		
NOR/SOFT [H]	NORMAL/SOFT TAPE PLAY Ⓗ	REV MOTOR V1	REVIEW MOROR V1
NORMAL [H]	NORMAL Ⓗ	REV MOTOR V2	REVIEW MOTOR V2
NR BIAS	NR BIAS	REV MOTOR [+]	REVIEW MOTOR (+)
NTSC [L]	NTSC Ⓛ	REV MOTOR [−]	REVIEW MOTOR (−)
OCH	CONTROL AGC CIRCUIT	REV. M. GND	REVIEW MOTOR GND
OUT	OUTPUT	RF. CHROMA	RF CHROMINANCE SIGNAL
P-OFF [H]	POWER OFF Ⓗ	RF OUT	RF OUTPUT
P-OFF [L]	POWER OFF Ⓛ	RF Y	RF LUMINANCE SIGNAL
P. FAIL	POWER FAILURE DETECT	RF. Y. IN	RF LUMINANCE SIGNAL INPUT
P. OFF [H]	POWER OFF Ⓗ	RF. Y. OUT	RF LUMINANCE SIGNAL OUTPUT

ROTAR. SW	ROTARY SW
ROTARY	ROTARY SW
RST	RESET
RST [L]	RESET Ⓛ
Rch/INST	Rch/INSERT
S IN	SERIAL DATA INPUT
S OUT	SERIAL DATA OUTPUT
S-PHOTO	SUPPLY PHOTO TRANSISTOR
S-RL. PLS	SUPPLY REEL PULSE
S. CLK	SERIAL CLOCK
S. CLK/AV	SERIAL CLOCK/AV
S. DATA	SERIAL DATA
S. DATA/A	SERIAL DATA
S. PHOTO	SUPPLY PHOTO TRANSISTOR
S. TAB [L]	SAFETY TAB SW ON Ⓛ
S/P/N	SECAM/PAL/NTSC
SC IN	SERIAL CLOCK INPUT
SC OUT	SERIAL CLOCK OUTPUT
SCK SELECT	SERIAL CLOCK SELECT
SEL OUT [L]	SELECT OUTPUT (L)
SEL OUT [R]	SELECT OUTPUT (R)
SHUTTLE 1	SHUTTLE 1
SIF	SOUND INTERMEDIATE FREQUENCY
SLMUT [H]	INPUT SELECT MUTE Ⓗ
SLNID [+]	SOLENOID (+)
SLNID [−]	SOLENOID (−)
SLW TR. MM	SLOW TRACKING MONO MULTI
SLW TR. REF	SLOW TRACKING REFERENCE VOLTAGE
SNS. GND	SENSOR GND
SOFT [H]	SOFT TAPE PLAY Ⓗ
SOFT [H]/NORMAL	SOFT TAPE PLAY Ⓗ/NORMAL Ⓗ
SOLENOID ON [L]	SOLENOID ON Ⓛ
SP [H]	SP Ⓗ
SP/L/SLP	SP/LP
SSS [L]	SLOW/STILL/STOP
STEREO LED	STEREO LED
STEREO [H]	STEREO Ⓗ
STEREO [L]	STEREO Ⓛ
STOP. PO	STOP POSITION
STOP/5V	STOP POSITION/5V
STOP1/TAPE SEL	STOP1 POSITION/TAPE SELECT
STOP1/PAL:ST	STOP1 POSITION/PAL
STOP2. PO	STOP 2 POSITION
STOP2/S-TAB	STOP 2 POSITION/SAFETY TAB SW
STREO [H]	STEREO Ⓗ
SUB BIAS	SUB BIAS
SUB. SW	SUB SW
SVHS CAS [L]	S-VHS CASSETTE Ⓛ
SW. 5. DET	SW 5V DETECT
SYNC [L]	SYNC Ⓛ
SYSCON 5V	SYSTEM CONTROL 5V
SYSTEM	SYSTEM SW
T-PHOTO	TAKE-UP PHOTO TRANSISTOR
T-RL. PLS	TAKE-UP REEL PULSE
T. BUSCLK	TIMER BUS CLOCK
T. BUSLSN	TIMER BUS LISTEN
T. BUSTLK	TIMER BUS TALK
T. END [L]	TAPE END Ⓛ
T. PHOTO	TAKE-UP PHOTO TRANSISTOR
TAPE END [L]	TAPE END Ⓛ
TAPE END [L]/CAM	TAPE END Ⓛ/CAMERA PAUSE
TEST	TEST MODE
TPZ	TRAPEZOIDAL WAVE CIRCUIT
TRIC [L]	TRIC PLAY Ⓛ
TRICK [L]	TRIC PLAY Ⓛ
TRK. ENV	AUTO TRACKING ENVELOPE DETECT
TU. AUDIO	TUNER AUDIO
TU. GND	TUNER GND
TU. V. IN	TUNER VIDEO SIGNAL INPUT
TU. VIDEO	TUNER VIDEO
TUN NOR IN	TUNER NORMAL INPUT
TUN R	TUNER AUDIO (R)
TUN. AUDIO IN	TUNER AUDIO INPUT
TUNER 12V	TUNER 12V
TUNER L	TUNER AUDIO (L)
TUNER V IN	TUNER VIDEO SIGNAL INPUT
TUNER [L]	TUNER AUDIO (L)
TUNER [N]	TUNER AUDIO (NORMAL)
TUNER [R]	TUNER AUDIO (R)
TUNER. 12	TUNER 12V
TUOFF [H]	TUNER OFF Ⓗ
TV. AUDIO	TV AUDIO
TV/VTR	TV/VTR
TXTON [L]	TEXT ON Ⓛ
U. REG45V	UNREGULATOR 45V
UNREG	UNREGULATOR
UNREG19V	UNREGULATOR 19V
V. REF	REFERENCE VOLTAGE
V. EE [H]	VIDEO EE Ⓗ
V. EE [L]	VIDEO EE Ⓛ
VCO REF	RERERENCE OSCILLATER
VD. IN	VIDEO SIGNAL INPUT
VD. OUT	VIDEO SIGNAL OUTPUT
VIDEO EE [L]	VIDEO EE Ⓛ
VIDEO IN	VIDEO SIGNAL INPUT
VIDEO OUT	VIDEO SIGNAL OUTPUT
VM	MOTOR VOLTAGE
VM DOWN [L]	MOTOR VOLTAGE DOWN Ⓛ
VSS	VERTICAL SYNC SIGNAL
VTR [H]	VTR Ⓗ
VTR. 12V	VTR 12V
X IN	OSCILLATOR INPUT
X OUT	OSCILLATOR OUTPUT

2. POWER SCHEMATIC DIAGRAM (VEP01487H: NV-HD100B) (VEP01487K: NV-HD100EB) [Page: 3-53]



IMPORTANT SAFETY NOTICE:
COMPONENTS IDENTIFIED WITH THE MARK △ HAVE THE SPECIAL CHARACTERISTICS FOR SAFETY WHEN REPLACING ANY OF THESE COMPONENTS. USE ONLY THE SAME TYPE

NOTE 1. WHEN MEASURE THE VOLTAGE OR WAVEFORM ON THE POWER TRANSFORMER CIRCUIT. SET THE GND TERMINAL OF MEASURING POINT AS FOLLOWS.
PRIMARY SIDE IC1101-(3)
SECONDARY SIDE TP GND OF MAIN C B A.
NOTE 2. THE DC VOLTAGE INDICATED IN PRIMARY SIDE IS SHOWN THE VOLTAGE WHEN INPUT AC IS 240V

NOTE: DO NOT USE ANY PART NUMBER SHOWN ON THIS SCHEMATIC DIAGRAM FOR ORDERING. WHEN YOU ORDER A PART, PLEASE REFER TO PARTS LIST.

SYSTEM CONTROL & SERVO ICs VOLTAGE CHART (SP MODE)

REF. NO.	IC2001										IC2002									
MODE	1	2	3	4	5	6	7	8	9	10	1	2	3	4	5	6	7	8		
STOP	0	0.7	0	7.1	0	0	14.6	14.6	0.1	0.7	3.6	2.6	0	0	0	5.1	5.1	5.1		
PLAY	0	0.7	0.1	7.0	0	0	14.5	14.5	0	0.7	2.7	5.1	0	0	0	5.1	0	5.1		
REC	0	0.7	0	7.0	0	0	14.4	14.4	0.1	0.7	0	5.1	0	0	0	5.1	0	5.1		
F.F	0	0.8	0.1	14.3	0	0.1	14.4	14.3	0.1	0.7	2.7	5.1	0	0	0	5.1	0	0		
REW	0	0.8	0.1	14.5	0	0	14.5	14.5	0.1	0.7	5.1	0	0	0	0	5.1	5.1	5.1		

REF. NO.	IC2003																			
MODE	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
STOP	1.1	0	1.1	1.5	2.3	2.3	2.3	2.3	2.3	2.3	2.1	0	2.7	0.5	2.9	0.5	0.4	0	5.1	14.6
PLAY	—	0	—	1.4	2.3	2.3	2.3	2.3	2.3	2.3	0	0	0.7	0.7	2.9	2.6	0.4	0.1	5.1	14.5
REC	—	0	—	1.5	2.3	2.3	2.3	2.3	2.3	2.3	0	0	0.7	0.7	2.9	2.6	0.4	0.1	5.1	14.5
F.F	5.2	0.2	7.3	1.5	2.3	2.3	2.3	2.3	2.3	2.3	0	0	0.8	0.8	2.9	2.3	0.5	0.2	5.1	14.4
REW	6.8	0.1	7.5	1.5	2.3	2.3	2.3	2.3	2.3	2.3	5.1	0	0.8	0.7	2.9	2.4	0.5	0.1	5.1	14.5

REF. NO.	IC2003																			
MODE	21	22	23	24																
STOP	0.5	14.0	1.0	4.5																
PLAY	2.4	13.0	—	4.7																
REC	2.4	13.0	—	4.7																
F.F	12.3	3.6	6.1	14.7																
REW	12.2	5.1	7.9	14.3																

REF. NO.	IC2005																			
MODE	1	2	3	4	5	6	7	8												
STOP	2.6	2.6	2.6	0	2.6	2.6	2.6	5.1												
PLAY	2.6	2.6	2.6	0	2.6	2.6	2.6	5.1												
REC	2.6	2.6	2.6	0	2.6	2.6	2.6	5.1												
F.F	2.6	2.6	2.6	0	2.6	2.6	2.6	5.1												
REW	2.6	2.6	2.6	0	2.6	2.6	2.6	5.1												

REF. NO.	IC2901																			
MODE	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18		
STOP	14.4	14.6	0.1	1.1	0	2.6	2.5	2.6	2.6	2.7	5.1	3.7	3.8	3.7	1.5	14.6	14.4	0.1		
PLAY	14.4	14.6	0.1	1.0	0	2.6	2.6	2.6	2.8	5.1	3.8	3.6	3.8	1.5	1.2	14.5	14.2	0.2		
REC	14.4	14.6	0.1	1.0	0	2.6	2.6	2.6	2.7	5.1	3.8	3.8	3.8	3.6	1.5	14.2	14.6	0.1		
F.F	14.4	14.6	0.1	1.0	0	2.6	2.6	2.6	2.5	2.7	5.1	3.8	3.8	3.8	1.5	14.2	14.6	0.1		
REW	14.4	14.6	0	1.0	0	2.6	2.6	2.6	2.5	2.7	5.1	3.8	3.8	3.8	1.5	14.2	14.6	0.1		

REF. NO.	IC6001																			
MODE	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
STOP	0	5.1	0	0	0.1	5.1	0.1	0	2.5	3.8	0	0	0	0	0	2.6	5.1	5.1	0.1	0
PLAY	0	5.1	0	0	4.9	5.1	0	0	0	0	5.1	0	0	0	0	2.6	4.9	5.1	0	0
REC	0	5.1	0	0	4.9	5.1	0.1	0	4.6	0	0	0	0	0	0	2.6	4.9	5.1	—	0
F.F	0	5.1	5.1	0	3.0	0	0.1	0	2.7	0	0	0	0	0	0	2.6	4.9	5.1	0	0
REW	0	5.1	0	0	0	5.1	0	0	2.8	5.1	5.1	0	0	0	0	0	0	5.1	0	0

REF. NO.	IC6001																			
MODE	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40
STOP	0	5.1	0.5	2.5	2.2	2.5	0	2.5	0	2.6	2.4	0	5.1	0	0	0	0	2.6	0	2.5
PLAY	0	5.1	2.6	2.5	3.9	2.5	2.5	0	0	2.6	2.7	2.5	5.0	0	0	0	2.6	2.6	0	2.8
REC	5.1	5.1	2.6	2.5	0.3	0	2.5	2.5	0	2.6	2.4	2.7	5.0	0	0	0	2.6	2.5	0	2.4
F.F	5.1	5.1	2.3	2.5	2.7	2.5	2.5	2.5	0	2.6	2.5	2.7	5.0	0	0	0	2.6	2.6	0	2.9
REW	5.1	0	2.6	2.5	3.4	2.5	2.5	2.5	0	2.6	2.5	2.7	5.0	0	0	0	2.6	2.6	0	0

REF. NO.	IC6001																			
MODE	41	42	43	44	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60
STOP	2.5	5.1	1.2	3.7	0	4.0	5.1	5.1	0	0	0	1.4	5.1	5.1	5.1	5.1	0	0	0	4.9
PLAY	2.6	5.1	0	0	0	4.2	5.1	0	0	0	0	0	0	0.1	5.1	0	0	0	0	0
REC	2.6	5.1	1.4	3.0	0	4.0	5.1	0	0	0	0	0	5.1	0	0	5.1	0	0	0	0
F.F	2.5	5.1	1.1	3.6	0	4.0	5.1	5.1	0	0	0	1.4	5.1	0.1	0	5.1	0	0	0	4.1
REW	2.5	5.1	1.1	3.6	0	4.3	5.1	5.1	0	0	0	0	5.1	0.1	0	5.1	0	0	0	5.1

REF. NO.	IC6001																			
MODE	61	62	63	64	65	66	67	68	69	70	71	72	73	74	75	76	77	78	79	80
STOP	5.1	2.1	4.6	4.2	0	0	0	0	0.3	5.1	0	5.1	5.1	0	0.1	5.0	0	0	5.1	0
PLAY	5.1	0	4.6	4.5	0	0.1	0	0	0.3	5.1	0	0	0	0	0	5.0	0	4.8	0	0
REC	0	0	4.5	0	5.1	0	0	5.1	5.0	5.1	0	0	5.1	0	0.1	0	0	0	0	0
F.F	0	0	4.5	4.6	0	0	0	0	0.3	5.1	0	0	5.1	0	0.1	0	0	0	5.1	0
REW	5.1	5.1	4.6	4.6	0	0	0	0	0.3	5.1	0	5.1	5.1	0	0.1	0	0	0	5.1	0

REF. NO.	IC6001																			
MODE	81	82	83	84																
STOP	0	2.7	2.1	4.8																
PLAY	0	2.6	2.6	4.8																
REC	0	2.6	0	4.8																
F.F	0	2.6	2.6	4.8																
REW	0	2.6	2.6	4.8																

REF. NO.	IC6009																			
MODE	1	2	3	4	5	6	7	8												
STOP	2.6	2.6	2.6	0	4.9	0.7	13.4	14.6												
PLAY	2.6	2.6	2.6	0	4.9	0	13.3	14.5												
REC	2.6	2.6	2.6	0	4.9	0.7	13.3	14.5												
F.F	2.6	2.6	2.6	0	4.9	0	13.9	14.4												
REW	2.6	2.6	2.6	0	4.9	0.7	13.9	14.5												

SYSTEM CONTROL & SERVO TRANSISTORs DC VOLTAGE CHART (SP MODE)

REF. NO.	Q1503			Q2001			Q6001			Q6002			Q6003			Q6004		
MODE	E	C	B	E	C	B	E	C	B	E	C	B	E	C	B	E	C	B
STOP	14.7	4.5	14.1	5.1	4.6	5.1	5.0	5.1	5.6	5.2	14.6	5.7	5.2	−1.3	5.1	5.1	10.4	5.7
PLAY	14.3	4.7	13.8	5.1	4.8	5.1	5.0	5.1	5.6	5.0	14.5	5.7	5.0	5.0	4.3	5.1	10.2	5.7
REC	14.4	4.7	13.8	5.1	4.8	5.1	5.0	5.1	5.6	5.0	14.4	5.7	5.0	5.0	4.3	5.1	10.2	5.7
F.F	14.4	14.4	13.7	5.1	4.8	5.1	5.0	5.1	5.7	5.1	14.5	5.7	5.1	5.0	4.3	5.1	10.2	5.7
REW	14.4	14.4	13.7	5.1	4.9	5.1	5.0	5.1	5.7	5.0	14.5	5.7	5.1	5.0	4.3	5.1	10.0	5.7

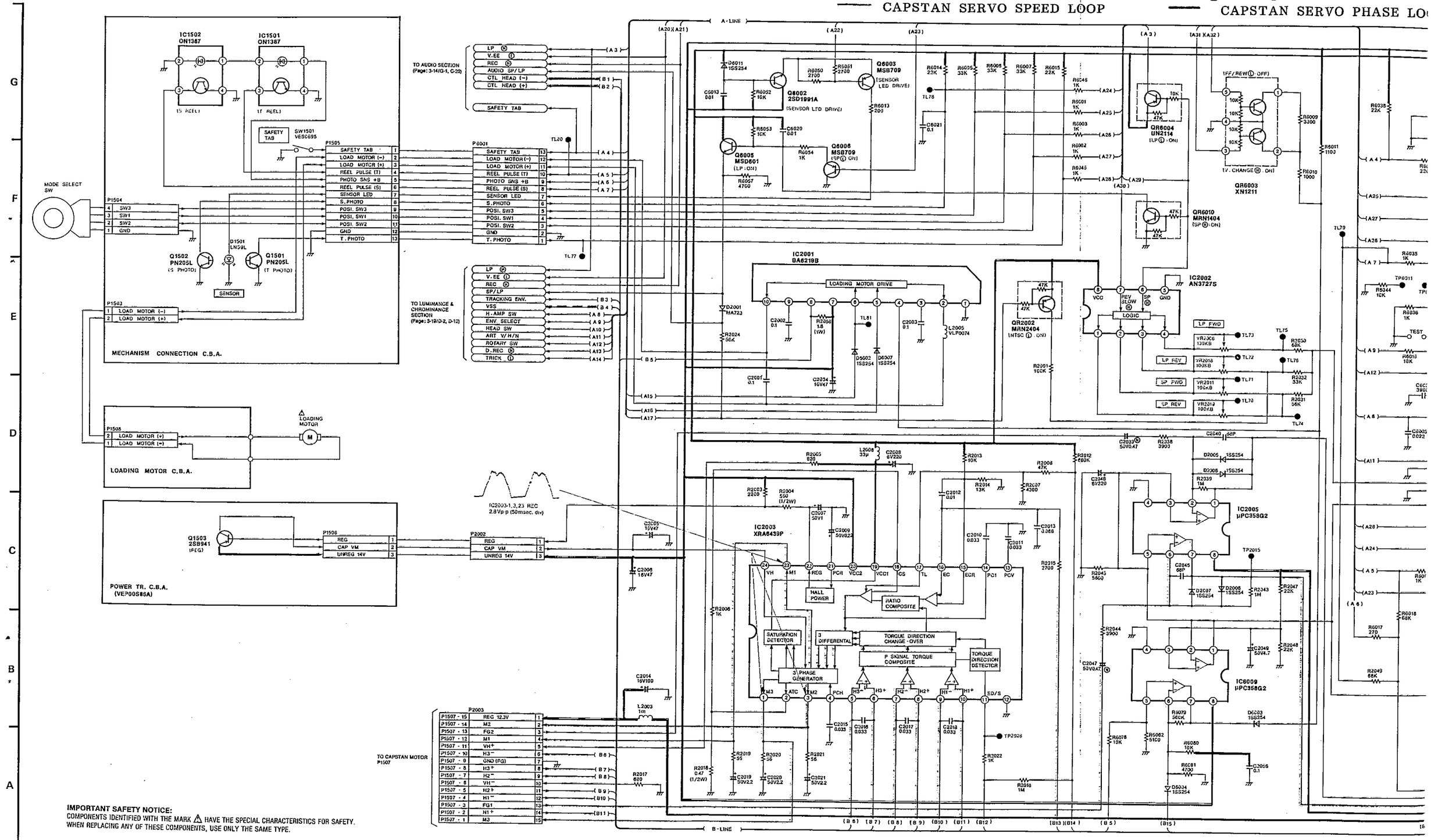
REF. NO.	Q6005			Q6006																
MODE	E	C	B	E	C	B														
STOP	0.3	5.1	0	0	0	0														
PLAY	0.3	5.1	0	0	0	0														
REC	0.3	5.1	0	0	0	0														
F.F	0.3	5.1	0	0	0	0														
REW	0.3	5.1	0	0	0	0														

REF. NO.	QR2001						QR2002			QR6003						QR6004		
MODE	1	2	3	4	5		E	C	B	1	2	3	4	5		E	C	B
STOP	0	0	5.0	0	5.0		5.1	0	5.1	0	0	5.1	0	5.0		5.1	0.1	5.1
PLAY	0	0	5.0	0	0		5.1	0	5.1	0	0.1	5.1	0	5.0		5.1	0.1	5.1
REC	*0*	*0*	*5.0*	*0*	*5.0*		*5.1*	*0*	*5.1*	*0*	*0*	*5.1*	*0*	*5.0*		*5.1*	*0*	*5.1*
F.F	0	0.9	0	0	0		5.1	0	5.1	14.4	14.4	0	0	0		5.1	0.1	5.1
REW	0	0.8	0	0	0		5.1	0	5.1	14.4	14.4	0	0	0		5.1	0.1	5.1

REF. NO.	QR6005			QR6007						QR6010			QR6011					
MODE	E	C	B	1	2	3	4	5		E	C	B	E	C	B			
STOP	0	1.5	4.2	5.1	0	0	0	0		0	0	5.1	0	4.9	0			
PLAY	0	1.5	4.1	5.1	0	0	0	0		0	0	5.1	0	4.9	0			
REC	0	1.3	4.1	5.1	0	0	0	0		0	0	0.1	0	0	5.1			
F.F	0	1.4	4.2	5.1	0	0	0	0		0	0	5.1	0	4.9	0			
REW	0	1.3	4.0	5.1	0	0	0	0		0	0	5.1	0	4.9	0			

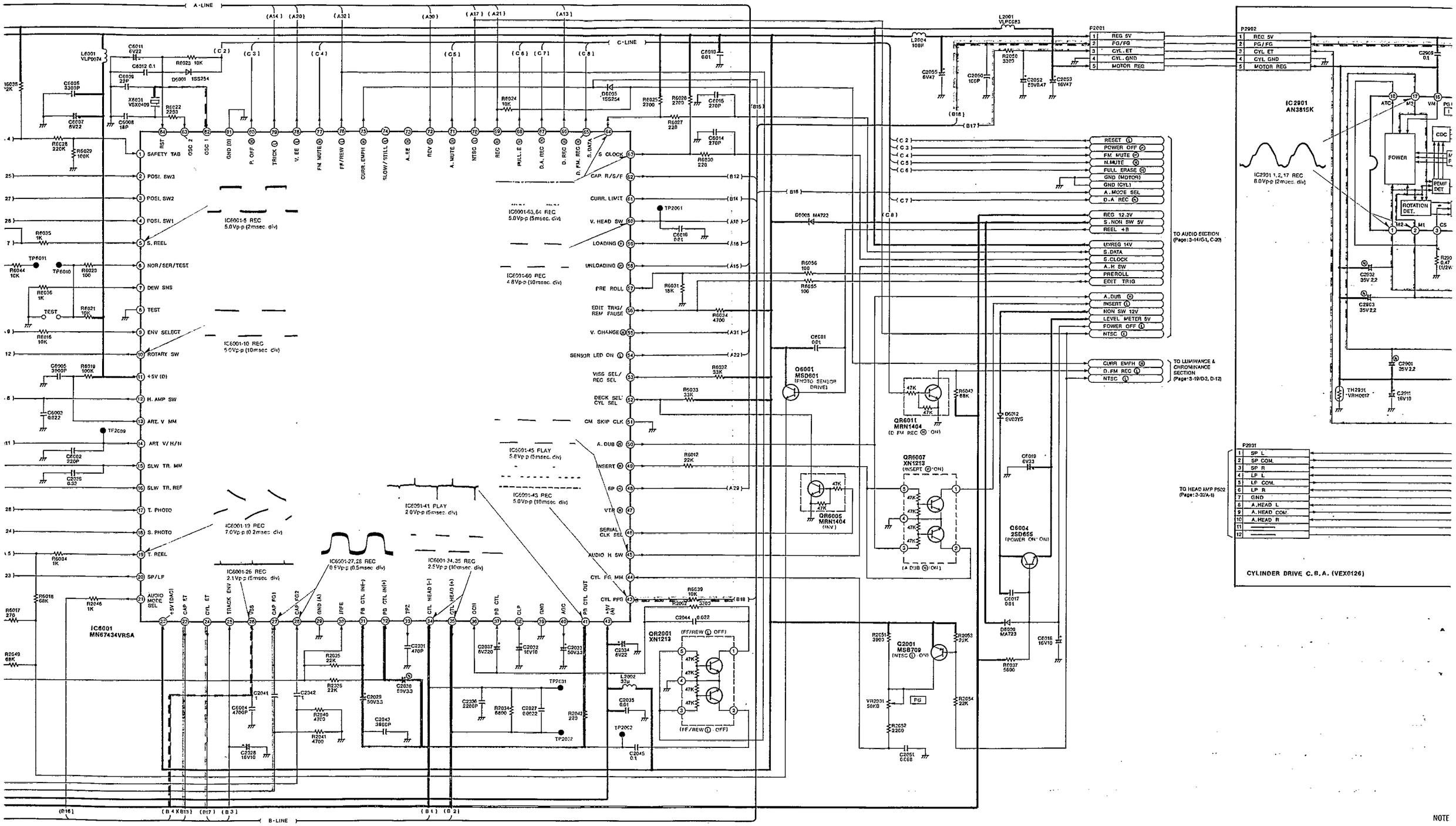
3-3. SYSTEM CONTROL & SERVO SECTION IN MAIN SCHEMATIC DIAGRAM (VEP03977H: NV-HD100B) (VEP03977J: NV-HD100EB) [Page: 3-48]

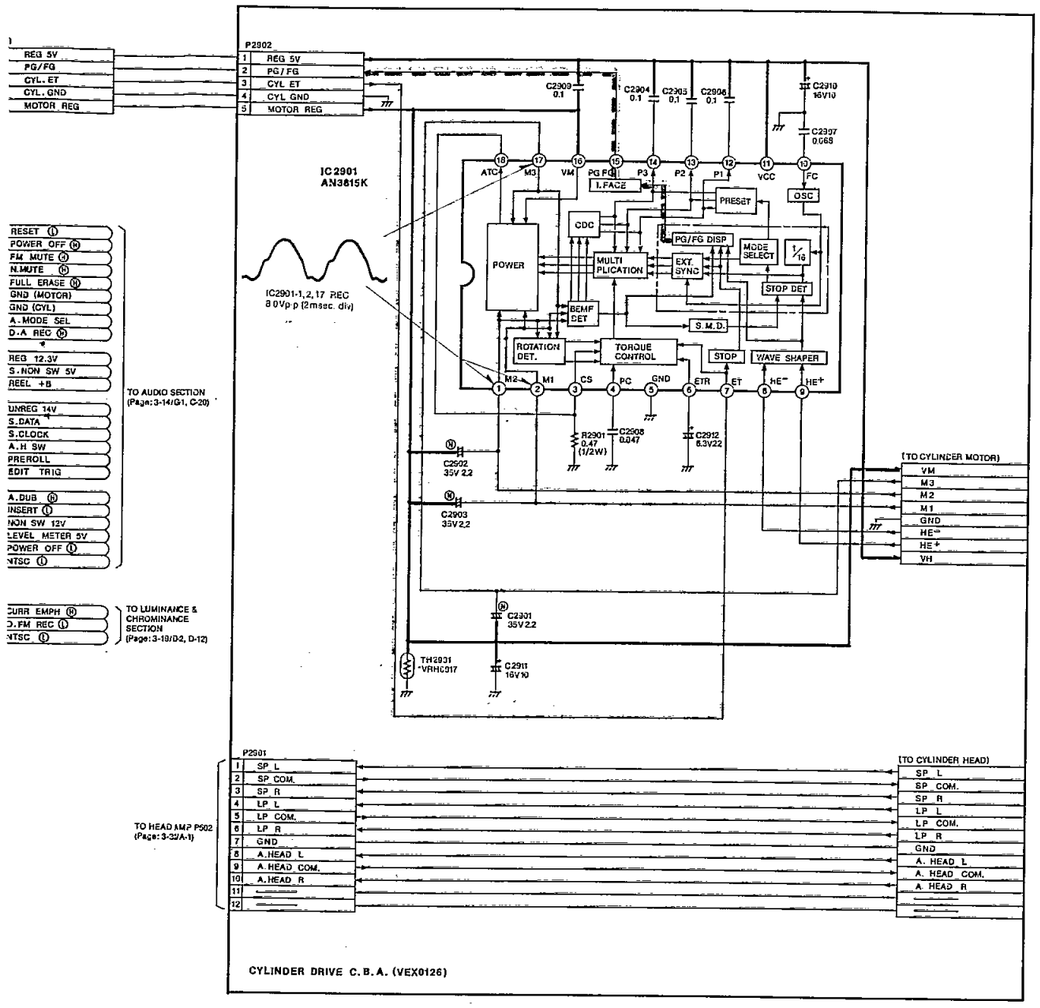
CAPSTAN SERVO SPEED LOOP — CAPSTAN SERVO PHASE LO



IMPORTANT SAFETY NOTICE:
COMPONENTS IDENTIFIED WITH THE MARK ⚠ HAVE THE SPECIAL CHARACTERISTICS FOR SAFETY.
WHEN REPLACING ANY OF THESE COMPONENTS, USE ONLY THE SAME TYPE.

ASE LOOP — — — CYLINDER SERVO SPEED LOOP — — — CYLINDER SERVO PHASE LOOP

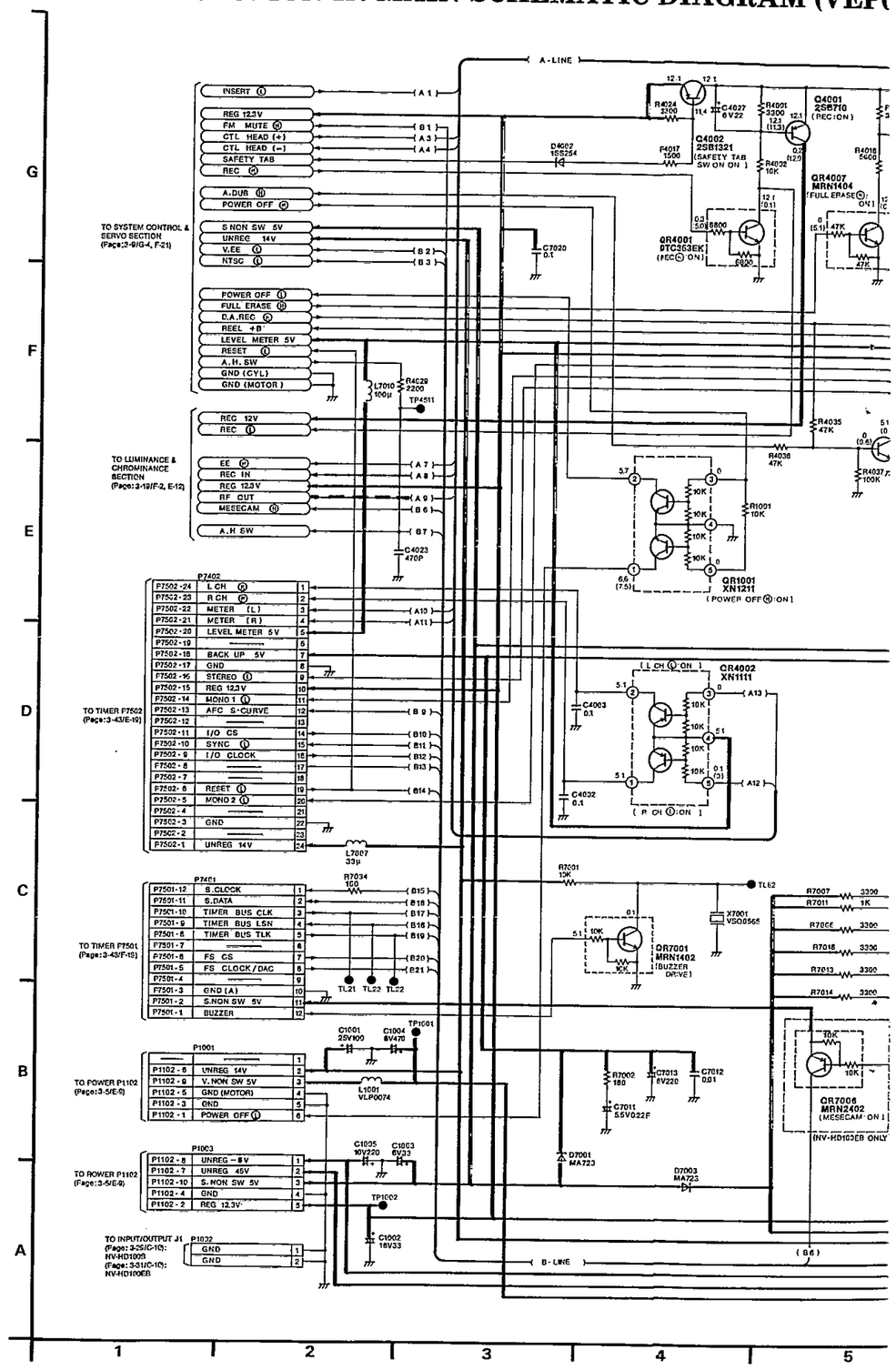




NOTE: DO NOT USE ANY PART NUMBER SHOWN ON THIS SCHEMATIC DIAGRAM FOR ORDERING. WHEN YOU ORDER A PART, PLEASE REFER TO PARTS LIST.

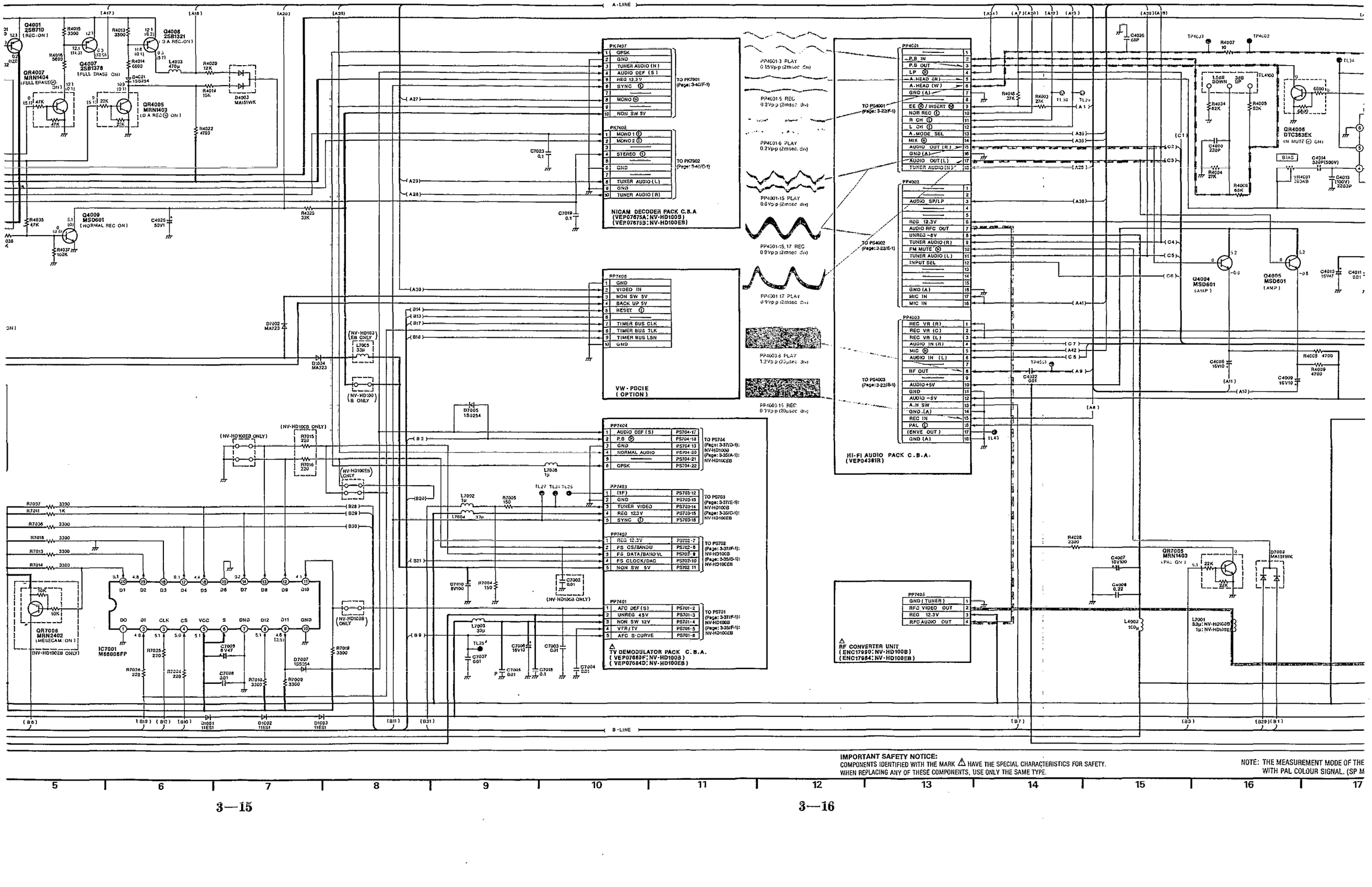
22 23 24 25 26

3-4. AUDIO SECTION IN MAIN SCHEMATIC DIAGRAM (VEP(



M (VEP03977H: NV-HD100B) (VEP03977J: NV-HD100EB) [Page: 3-48]

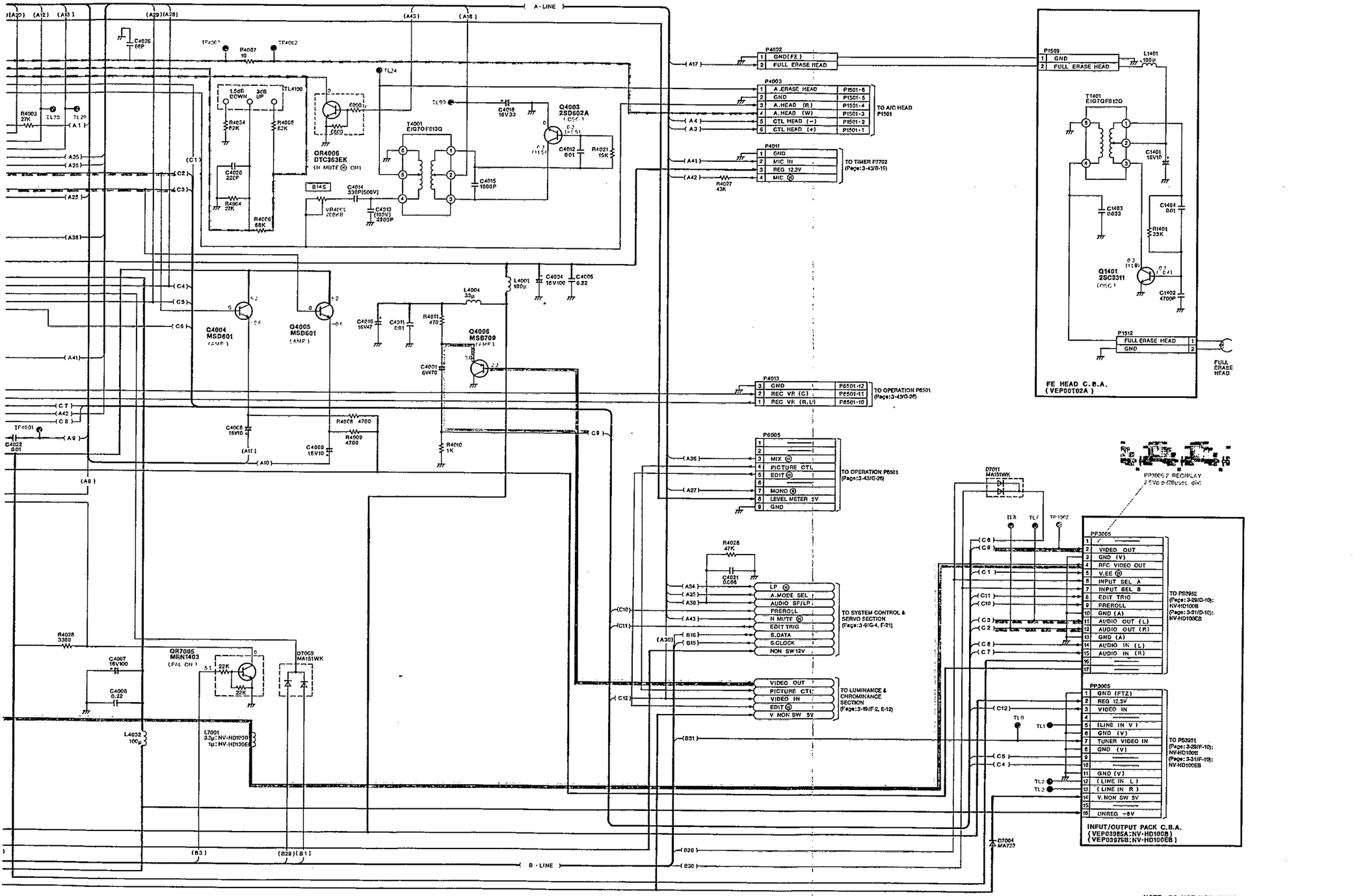
VIDEO MAIN SIGNAL PATH IN REC MODE — VIDEO MAIN SIGNAL PATH IN PLAYBACK MODE — AUDIO MAIN SIGNAL PATH IN REC MODE — AUDIO MAIN



IMPORTANT SAFETY NOTICE:
COMPONENTS IDENTIFIED WITH THE MARK ⚠ HAVE THE SPECIAL CHARACTERISTICS FOR SAFETY.
WHEN REPLACING ANY OF THESE COMPONENTS, USE ONLY THE SAME TYPE.

NOTE: THE MEASUREMENT MODE OF THE
WITH PAL COLOUR SIGNAL. (SP M

SIGNAL PATH IN REC MODE — — — AUDIO MAIN SIGNAL PATH IN PLAYBACK MODE



CHARACTERISTICS FOR SAFETY.
VE TYPE.

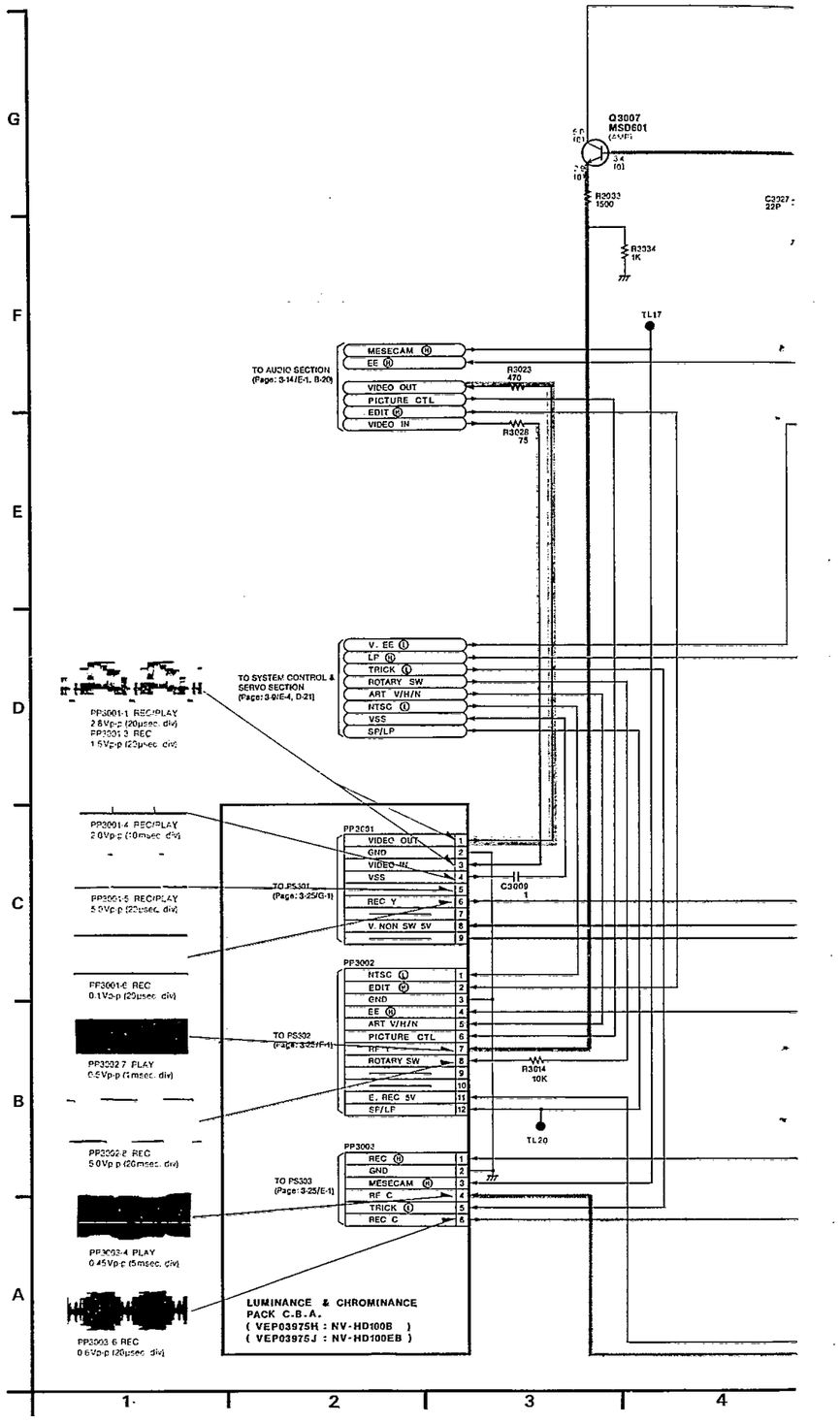
NOTE: THE MEASUREMENT MODE OF THE DC VOLTAGE IN THE BRACKETS ( ) ON THIS DIAGRAM IS RECORD MODE WITH PAL COLOUR SIGNAL. (SP MODE)

THE MEASUREMENT MODE OF THE DC VOLTAGE OUT OF THE BRACKETS ON THIS DIAGRAM IS PLAYBACK MODE WITH PAL COLOUR SIGNAL. (SP MODE)

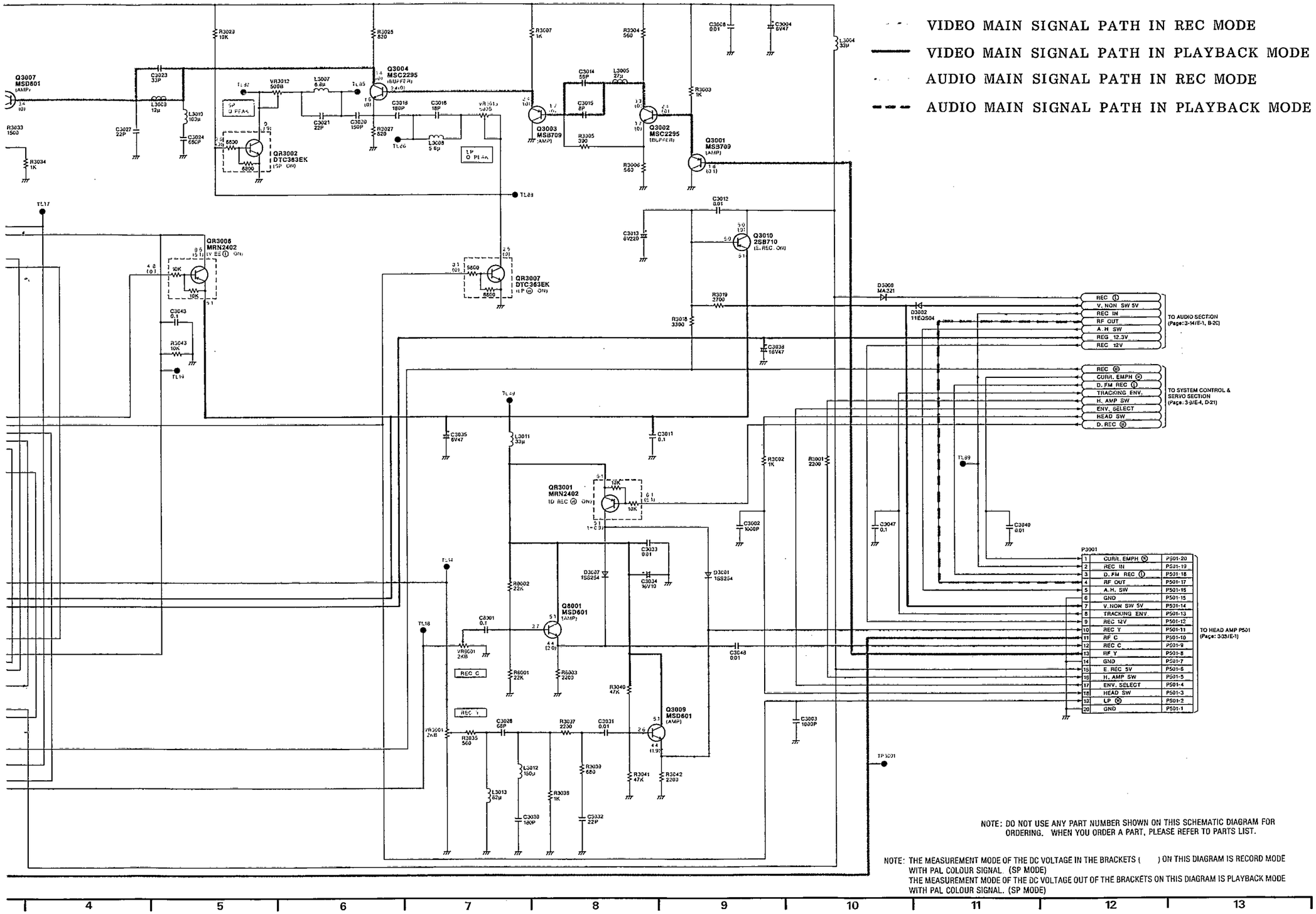
NOTE: DO NOT USE ANY PART NUMBER SHOWN ON THIS SCHEMATIC DIAGRAM FOR ORDERING. WHEN YOU ORDER A PART, PLEASE REFER TO PARTS LIST.

14 15 16 17 18 19 20 21 22 23 24

3-5. LUMINANCE & CHROMINANCE SECTION IN M/



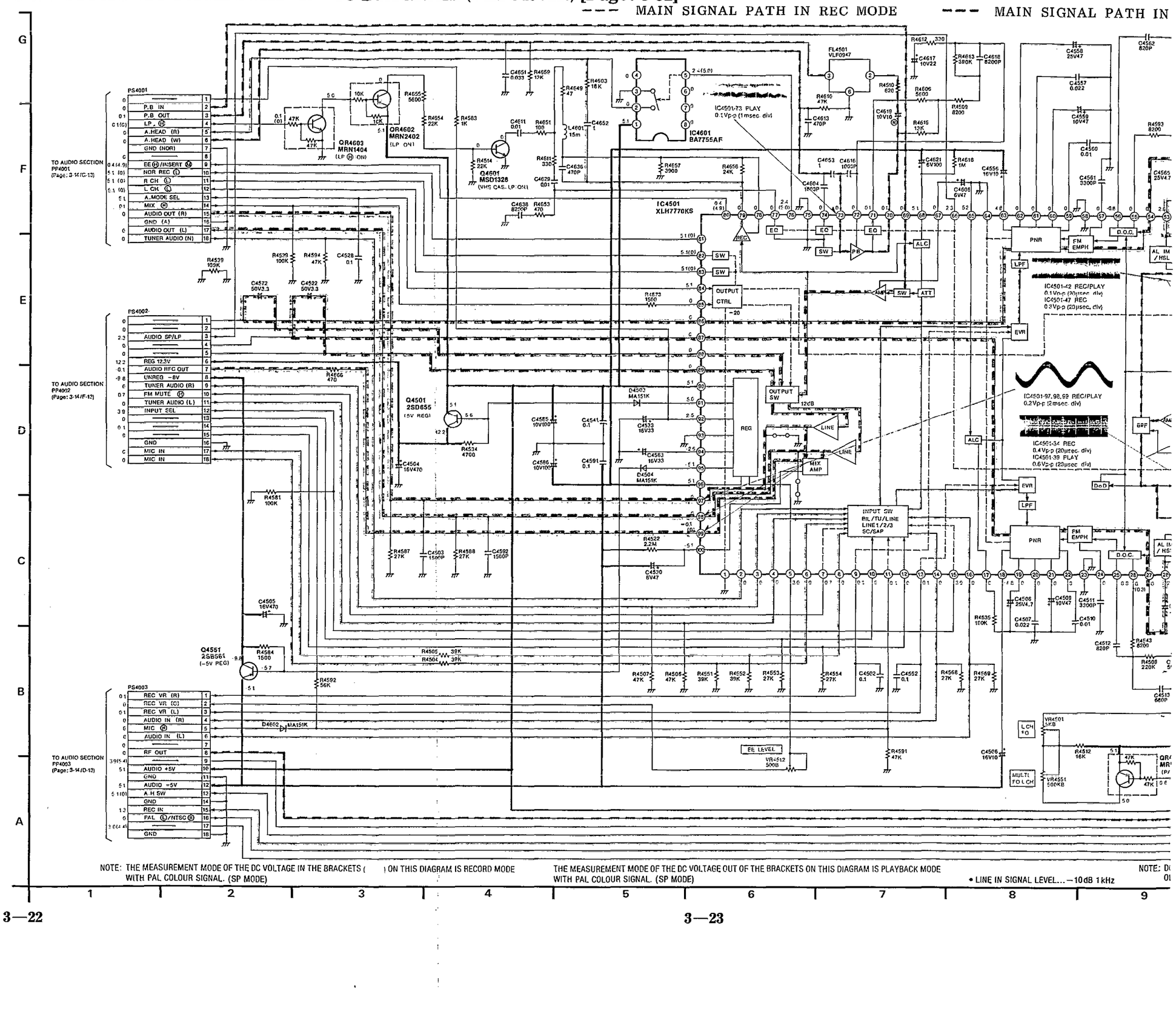
:CTION IN MAIN SCHEMATIC DIAGRAM (VEP03977H: NV-HD100B) (VEP03977J: NV-HD100EB) [Page: 3-48]



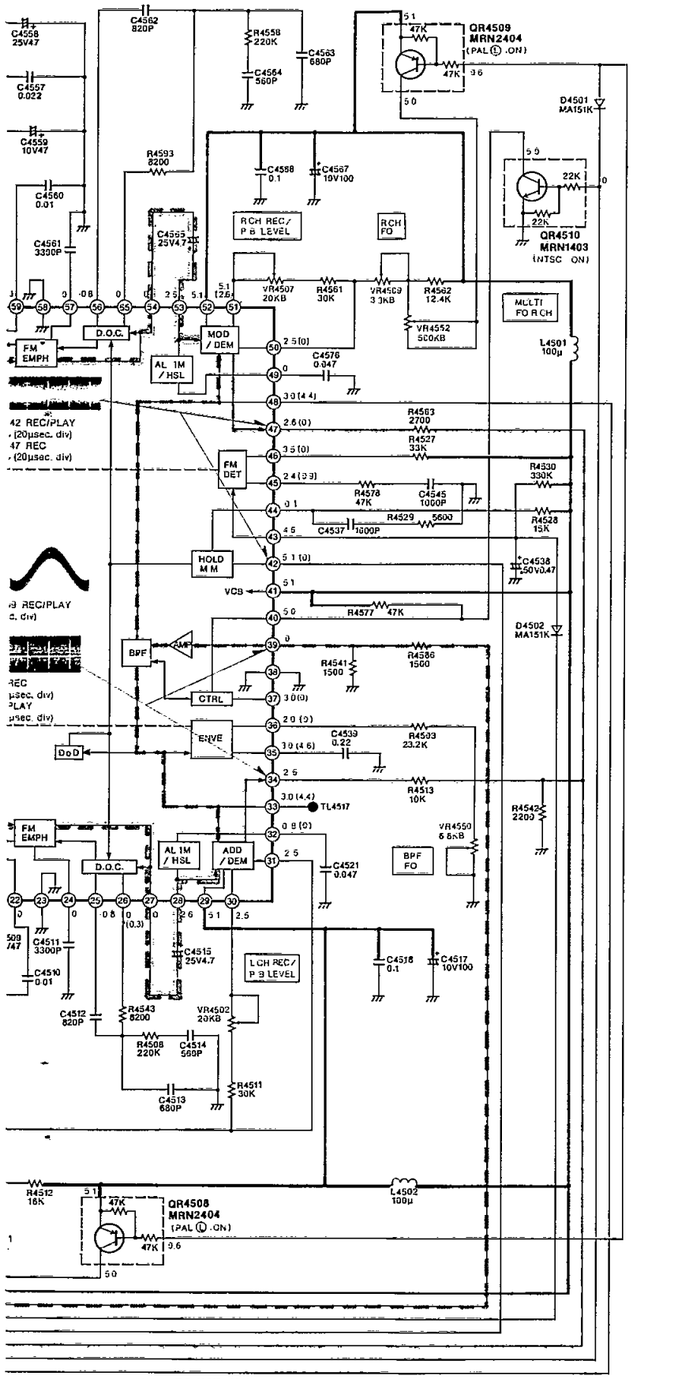
NOTE: DO NOT USE ANY PART NUMBER SHOWN ON THIS SCHEMATIC DIAGRAM FOR ORDERING. WHEN YOU ORDER A PART, PLEASE REFER TO PARTS LIST.

NOTE: THE MEASUREMENT MODE OF THE DC VOLTAGE IN THE BRACKETS ( ) ON THIS DIAGRAM IS RECORD MODE WITH PAL COLOUR SIGNAL. (SP MODE)
THE MEASUREMENT MODE OF THE DC VOLTAGE OUT OF THE BRACKETS ON THIS DIAGRAM IS PLAYBACK MODE WITH PAL COLOUR SIGNAL. (SP MODE)

3-6. Hi-Fi AUDIO PACK SCHEMATIC DIAGRAM (VEP04361R) [Page: 3-61]



ıNAL PATH IN PLAYBACK MODE

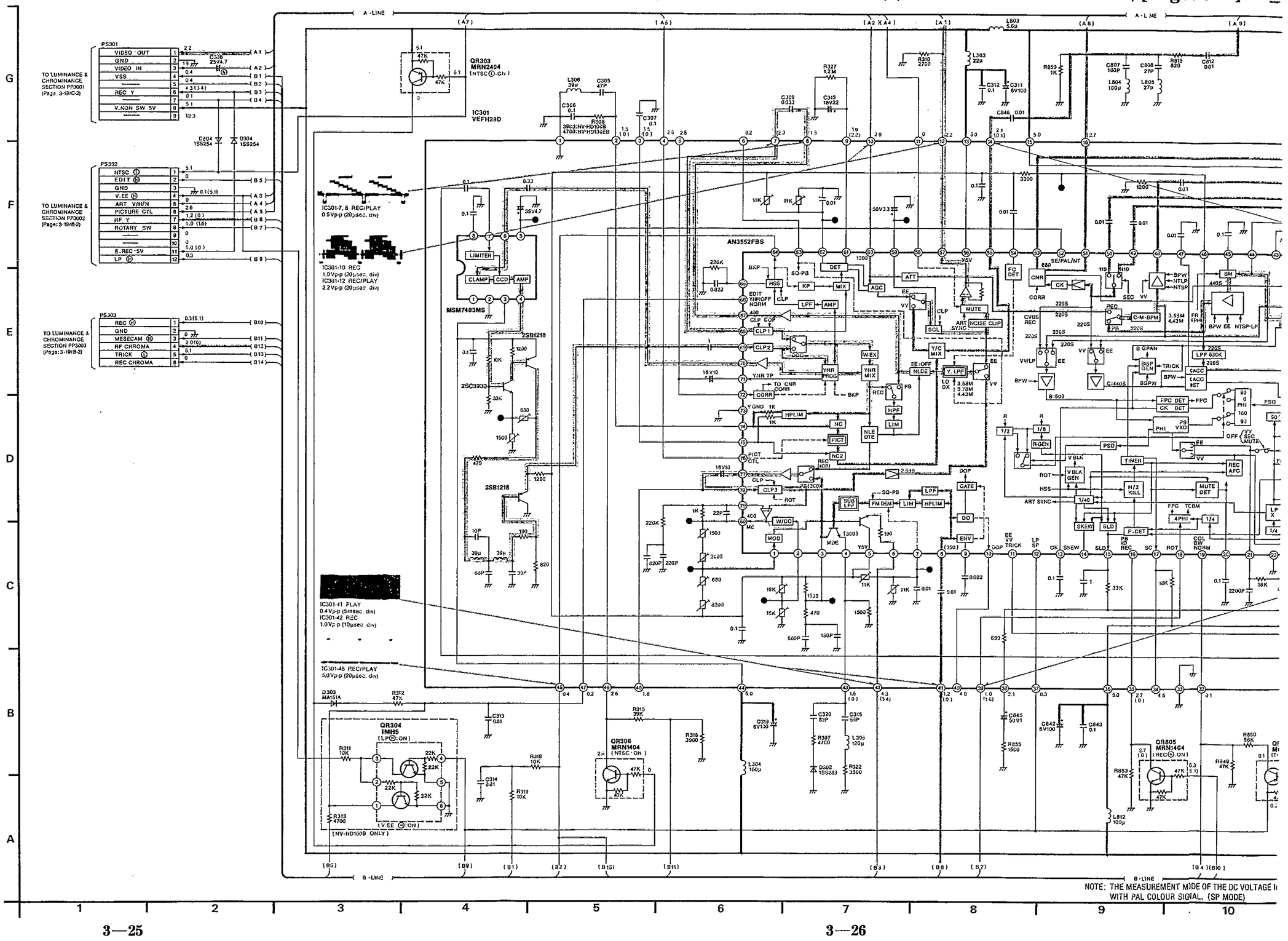


NOTE: DO NOT USE ANY PART NUMBER SHOWN ON THIS SCHEMATIC DIAGRAM FOR ORDERING. WHEN YOU ORDER A PART, PLEASE REFER TO PARTS LIST.

.—10dB 1kHz

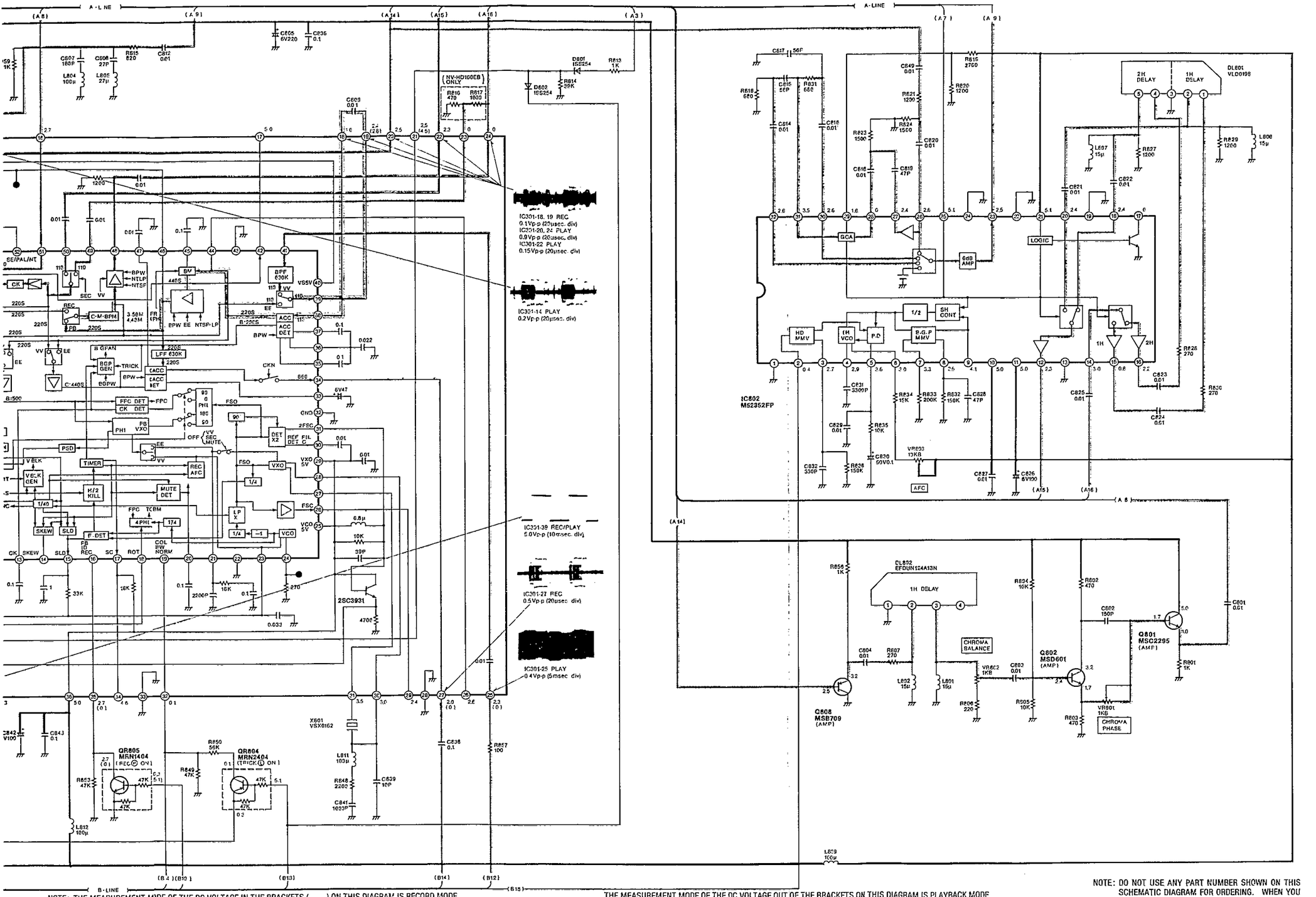
9 10 11

3-7. LUMINANCE & CHROMINANCE PACK SCHEMATIC DIAGRAM (VEP03975H: NV-HD100B) (VEP03975J: NV-HD100EB) [Page: 3-55]



MAIN SIGNAL PATH IN REC MODE

MAIN SIGNAL PATH IN PLAYBACK MODE



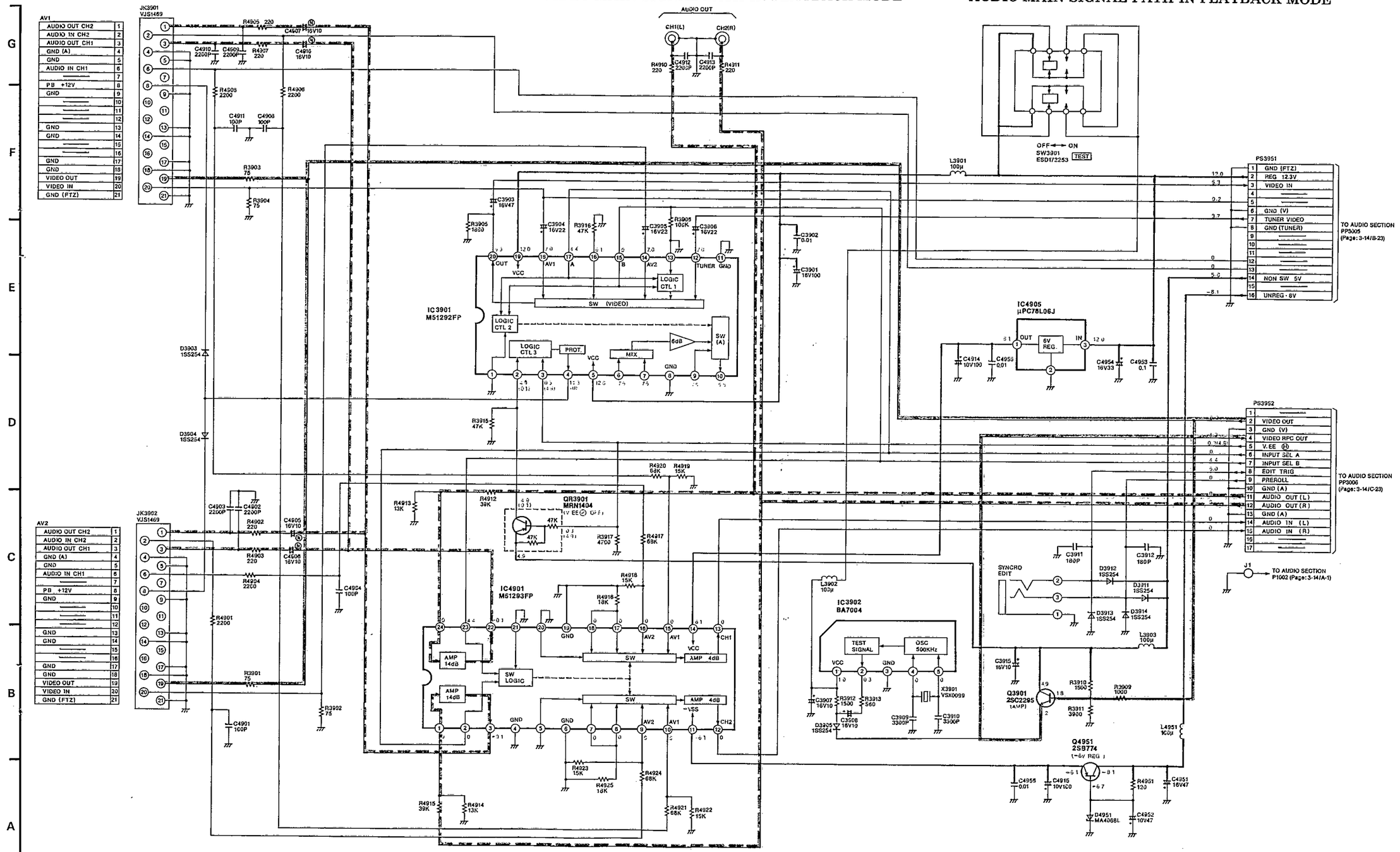
NOTE: THE MEASUREMENT MODE OF THE DC VOLTAGE IN THE BRACKETS ( ) ON THIS DIAGRAM IS RECORD MODE WITH PAL COLOUR SIGNAL. (SP MODE)

THE MEASUREMENT MODE OF THE DC VOLTAGE OUT OF THE BRACKETS ON THIS DIAGRAM IS PLAYBACK MODE WITH PAL COLOUR SIGNAL. (SP MODE)

NOTE: DO NOT USE ANY PART NUMBER SHOWN ON THIS SCHEMATIC DIAGRAM FOR ORDERING. WHEN YOU ORDER A PART, PLEASE REFER TO PARTS LIST.

3-8. INPUT/OUTPUT PACK SCHEMATIC DIAGRAM (VEP03985A: NV-HD100B) [Page: 3-57]

VIDEO MAIN SIGNAL PATH IN REC MODE
VIDEO MAIN SIGNAL PATH IN PLAYBACK MODE
AUDIO MAIN SIGNAL PATH IN REC MODE
AUDIO MAIN SIGNAL PATH IN PLAYBACK MODE



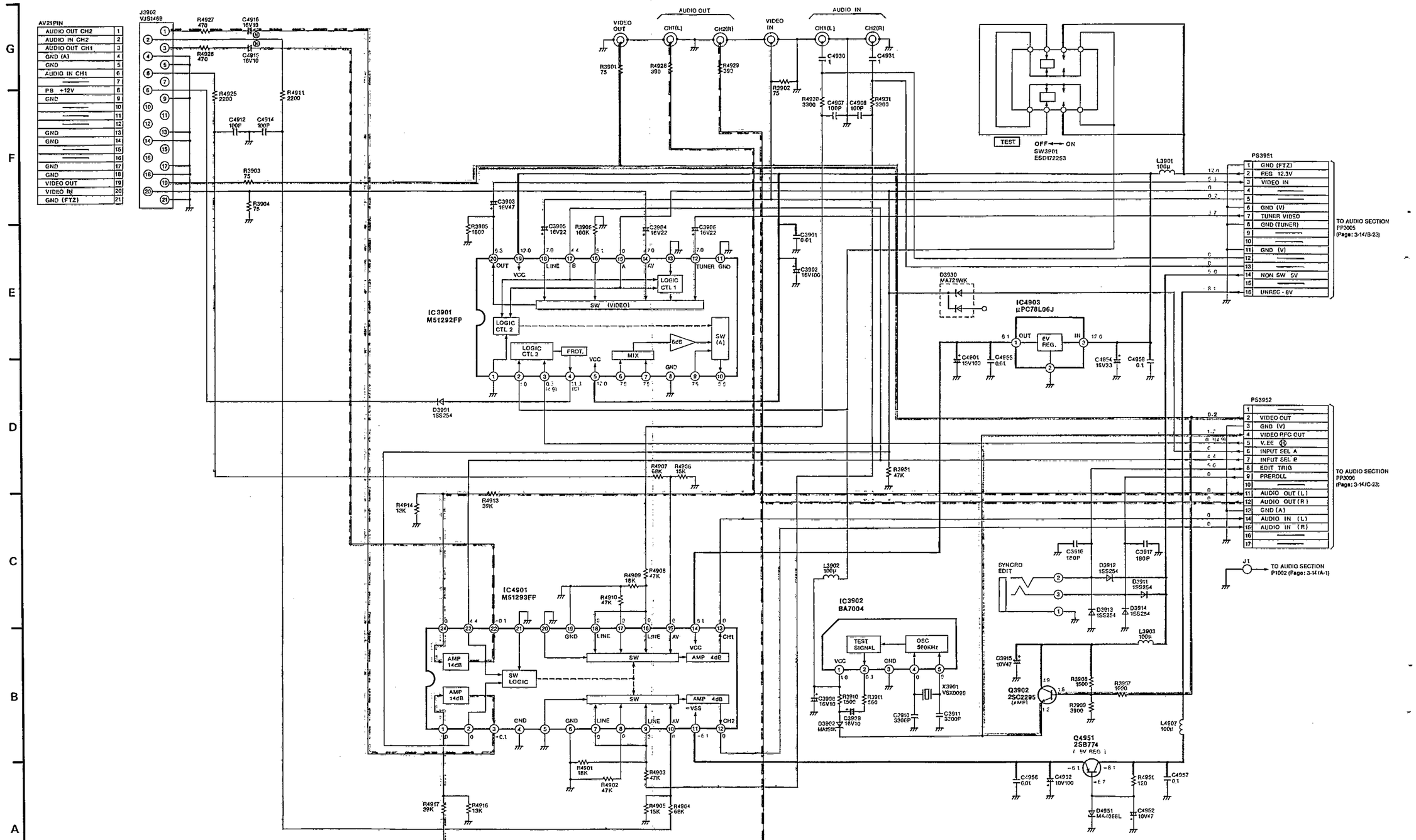
NOTE: THE MEASUREMENT MODE OF THE DC VOLTAGE IN THE BRACKETS ( ) ON THIS DIAGRAM IS RECORD MODE WITH PAL COLOUR SIGNAL. (SP MODE)

THE MEASUREMENT MODE OF THE DC VOLTAGE OUT OF THE BRACKETS ON THIS DIAGRAM IS PLAYBACK MODE WITH PAL COLOUR SIGNAL. (SP MODE)

NOTE: DO NOT USE ANY PART NUMBER SHOWN ON THIS SCHEMATIC DIAGRAM FOR ORDERING. WHEN YOU ORDER A PART, PLEASE REFER TO PARTS LIST.

3-9. INPUT/OUTPUT PACK SCHEMATIC DIAGRAM (VEP03979B: NV-HD100EB) [Page: 3-59]

——— VIDEO MAIN SIGNAL PATH IN REC MODE
——— VIDEO MAIN SIGNAL PATH IN PLAYBACK MODE
- - - - AUDIO MAIN SIGNAL PATH IN REC MODE
— — — AUDIO MAIN SIGNAL PATH IN PLAYBACK MODE



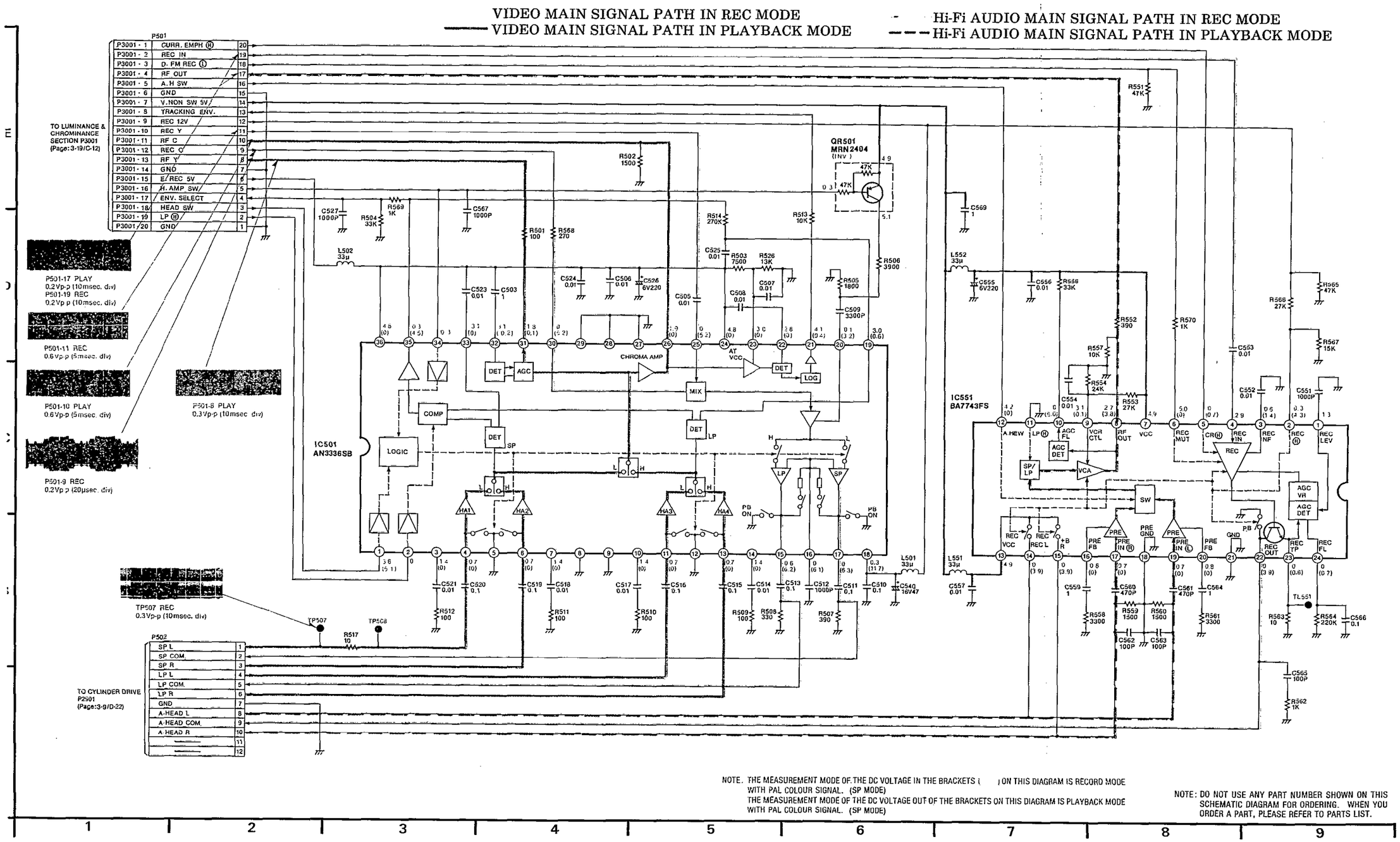
NOTE: THE MEASUREMENT MODE OF THE DC VOLTAGE IN THE BRACKETS ( ) ON THIS DIAGRAM IS RECORD MODE WITH PAL COLOUR SIGNAL. (SP MODE)

THE MEASUREMENT MODE OF THE DC VOLTAGE OUT OF THE BRACKETS ON THIS DIAGRAM IS PLAYBACK MODE WITH PAL COLOUR SIGNAL. (SP MODE)

NOTE: DO NOT USE ANY PART NUMBER SHOWN ON THIS SCHEMATIC DIAGRAM FOR ORDERING. WHEN YOU ORDER A PART, PLEASE REFER TO PARTS LIST.

:BER SHOWN ON THIS RDERING. WHEN YOU R TO PARTS LIST.

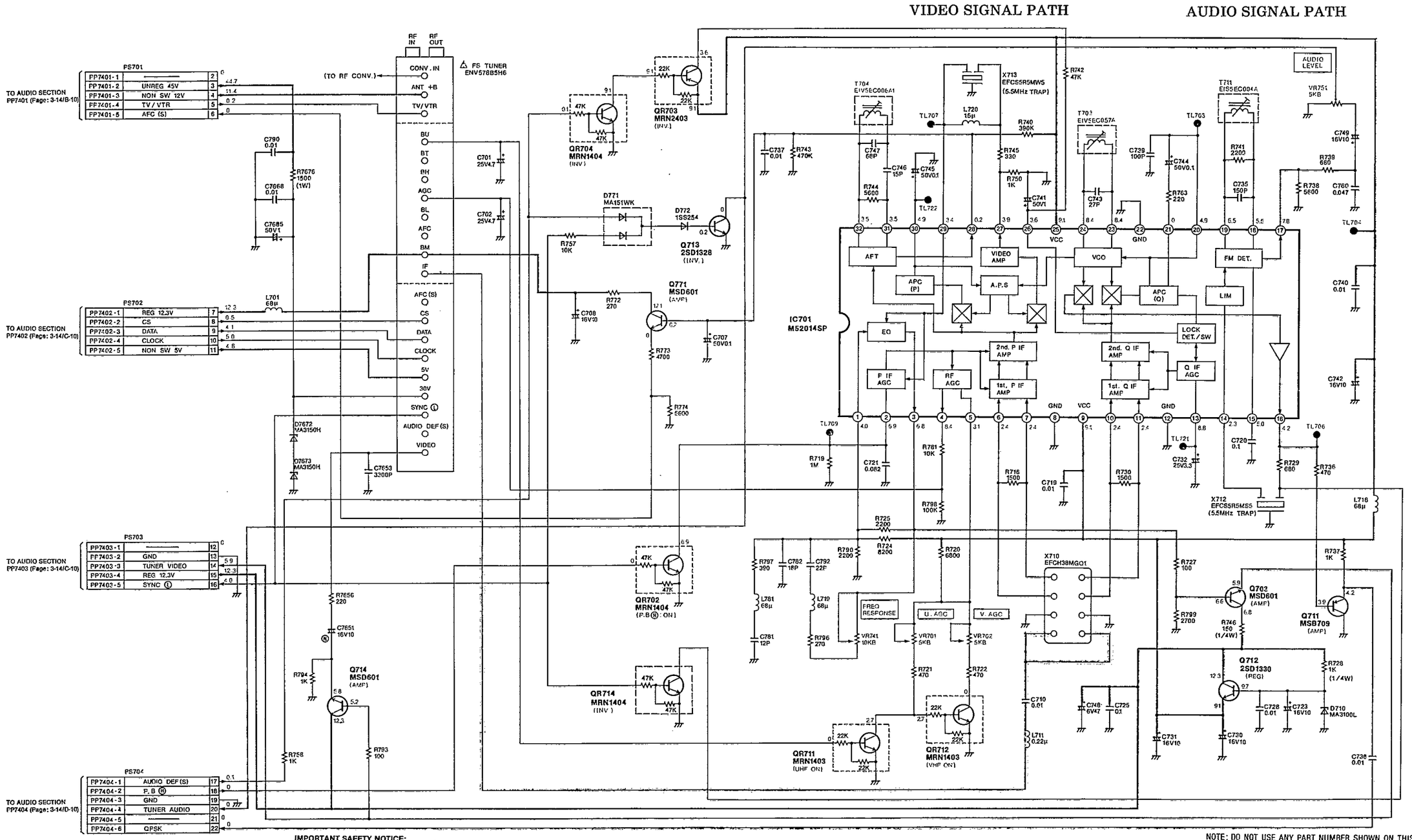
3-10. HEAD AMP SCHEMATIC DIAGRAM (VEP05176C) [Page: 3-64]



NOTE. THE MEASUREMENT MODE OF THE DC VOLTAGE IN THE BRACKETS ( ) ON THIS DIAGRAM IS RECORD MODE WITH PAL COLOUR SIGNAL. (SP MODE)
THE MEASUREMENT MODE OF THE DC VOLTAGE OUT OF THE BRACKETS ON THIS DIAGRAM IS PLAYBACK MODE WITH PAL COLOUR SIGNAL. (SP MODE)

NOTE: DO NOT USE ANY PART NUMBER SHOWN ON THIS SCHEMATIC DIAGRAM FOR ORDERING. WHEN YOU ORDER A PART, PLEASE REFER TO PARTS LIST.

1. TV DEMODULATOR PACK SCHEMATIC DIAGRAM (VEP07684D: HV-HD100EB) [Page: 3-73]

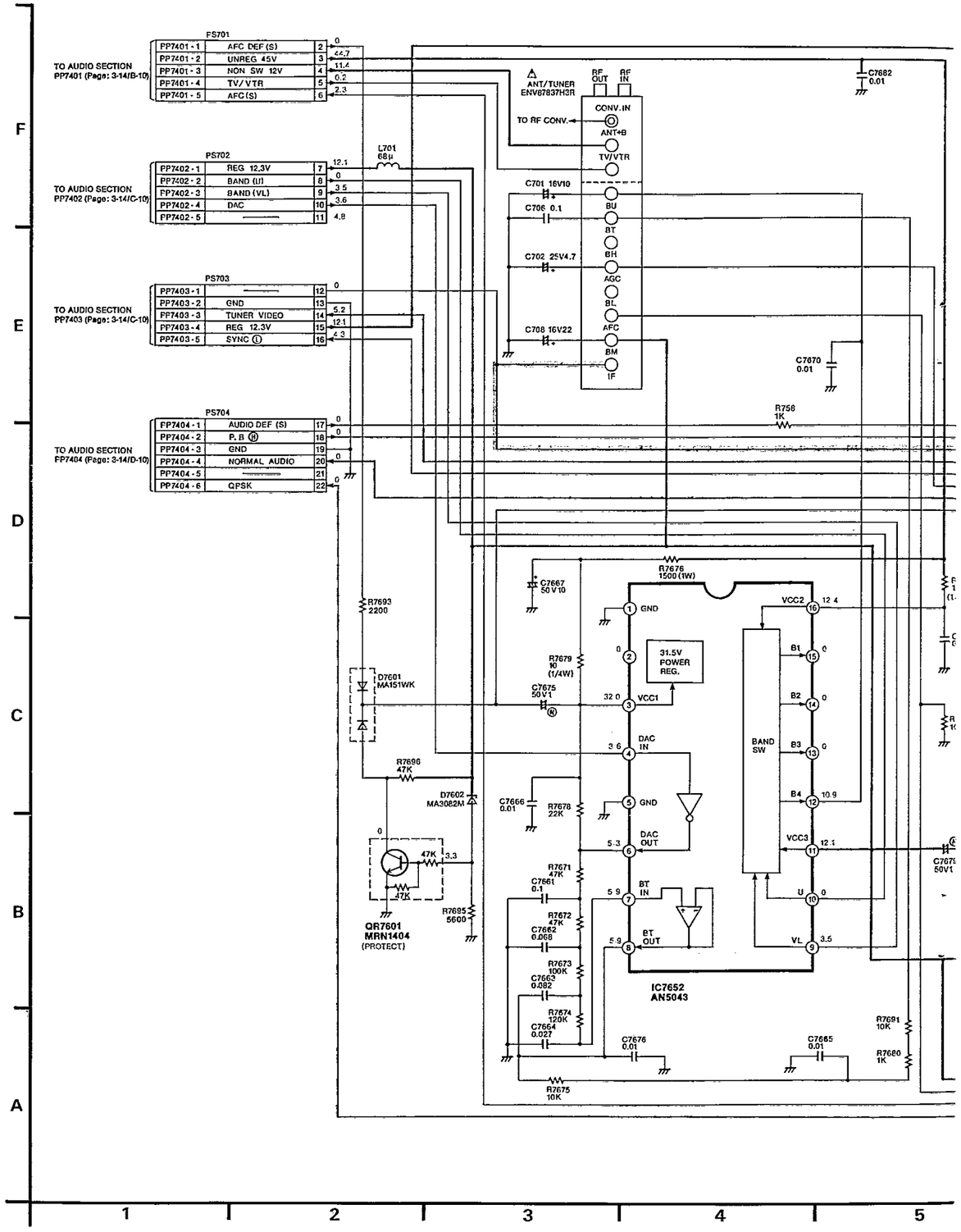


IMPORTANT SAFETY NOTICE:
COMPONENTS IDENTIFIED WITH THE MARK ⚠ HAVE THE SPECIAL CHARACTERISTICS FOR SAFETY.
WHEN REPLACING ANY OF THESE COMPONENTS, USE ONLY THE SAME TYPE

NOTE: THE MEASUREMENT MODE OF THE DC VOLTAGE ON THIS DIAGRAM IS STOP MODE.

NOTE: DO NOT USE ANY PART NUMBER SHOWN ON THIS SCHEMATIC DIAGRAM FOR ORDERING. WHEN YOU ORDER A PART, PLEASE REFER TO PARTS LIST.

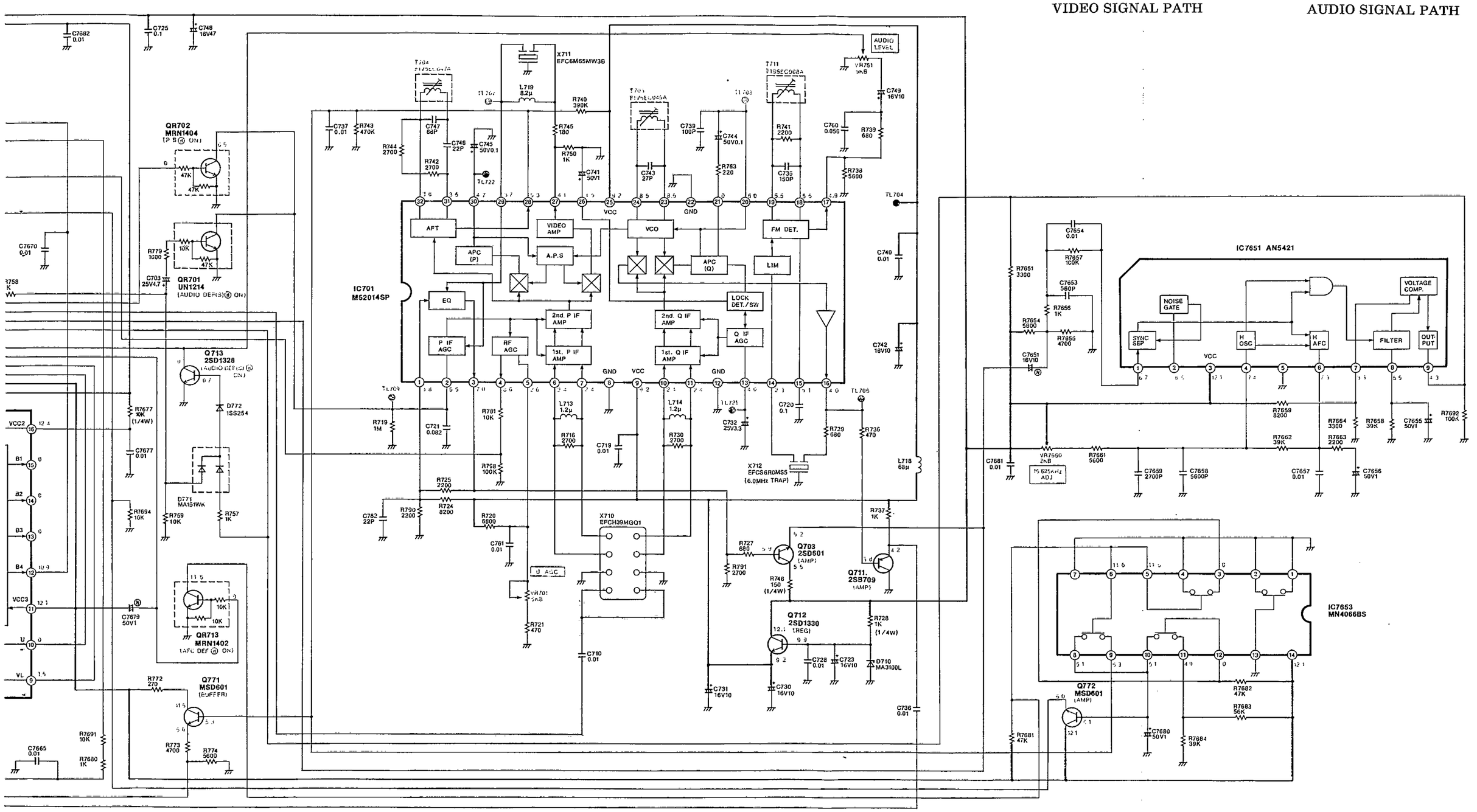
3-12. TV DEMODULATOR PACK SCHEMATIC DIAGRAM (VEP07680F: NV-I



:P07680F : NV-HD100B) [Page: 3-71]

VIDEO SIGNAL PATH

AUDIO SIGNAL PATH

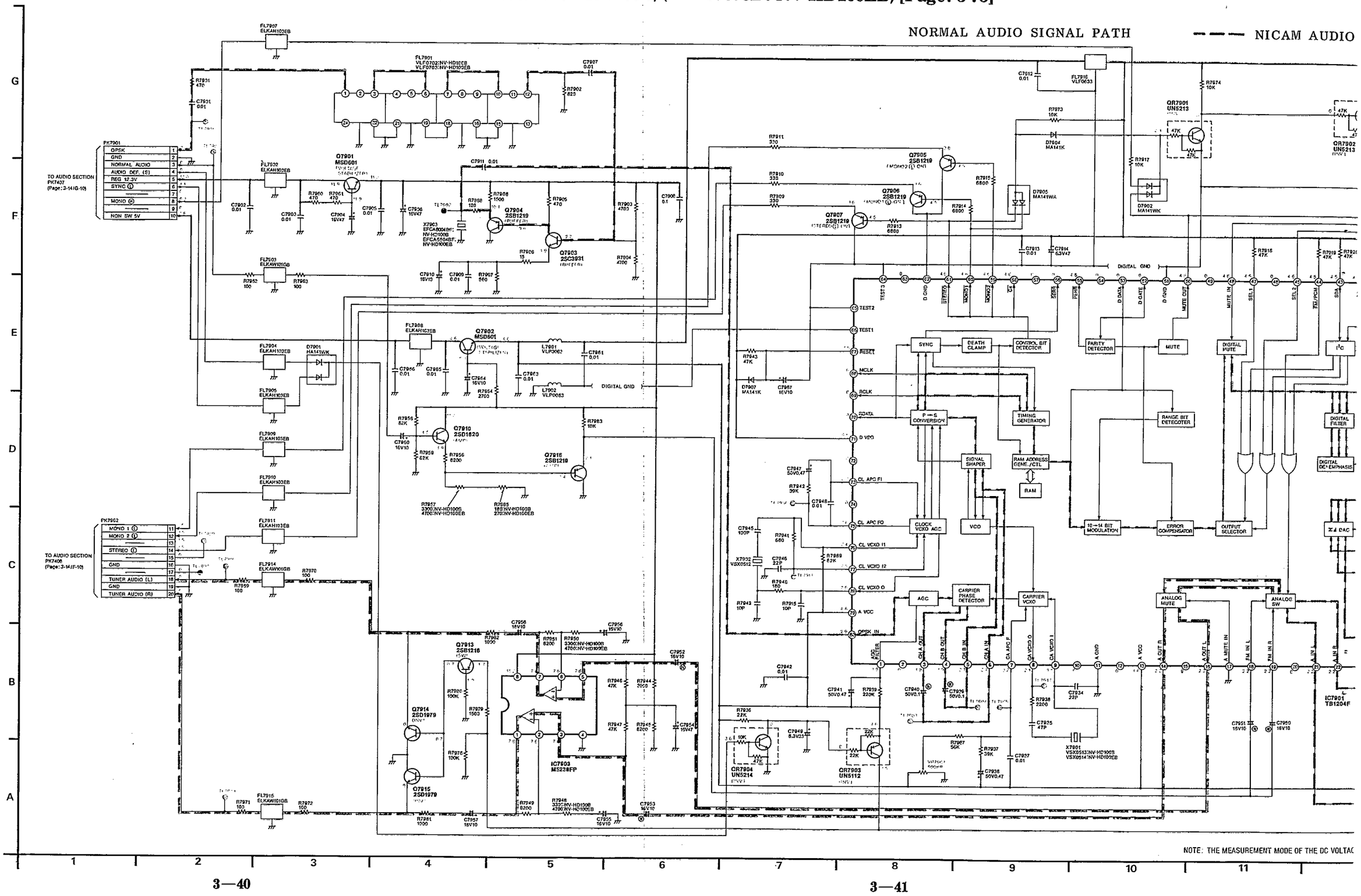


IMPORTANT SAFETY NOTICE:
COMPONENTS IDENTIFIED WITH THE MARK ⚠ HAVE THE SPECIAL CHARACTERISTICS FOR SAFETY.
WHEN REPLACING ANY OF THESE COMPONENTS, USE ONLY THE SAME TYPE.

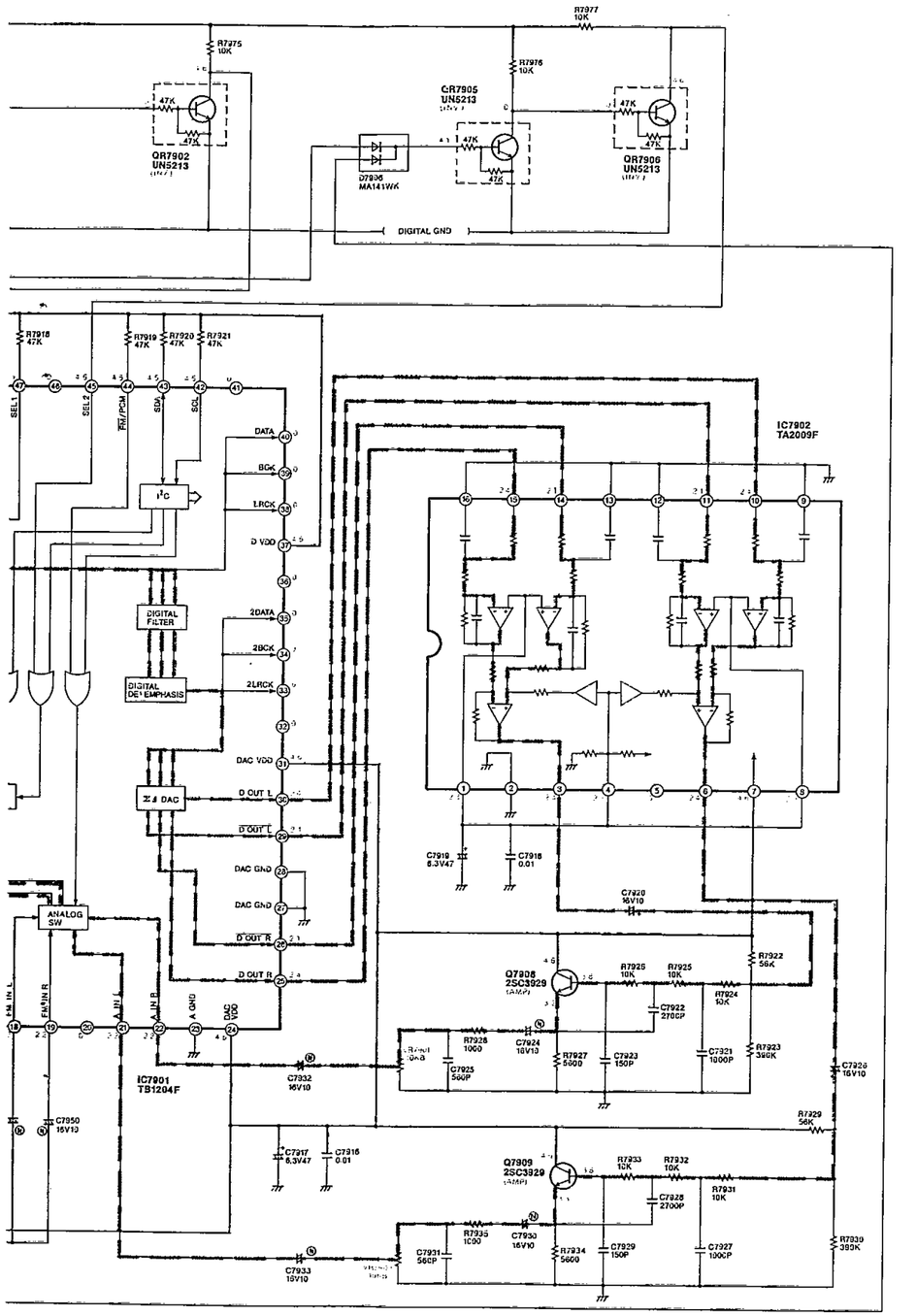
ASUREMENT MODE OF THE DC VOLTAGE ON THIS DIAGRAM IS STOP MODE.

NOTE: DO NOT USE ANY PART NUMBER SHOWN ON THIS SCHEMATIC DIAGRAM FOR ORDERING. WHEN YOU ORDER A PART, PLEASE REFER TO PARTS LIST.

3-13. NICAM DECODER PACK SCHEMATIC DIAGRAM (VEP07675A: NV-HD100B) (VEP07675B: NV-HD100EB) [Page: 3-75]



NICAM AUDIO SIGNAL PATH

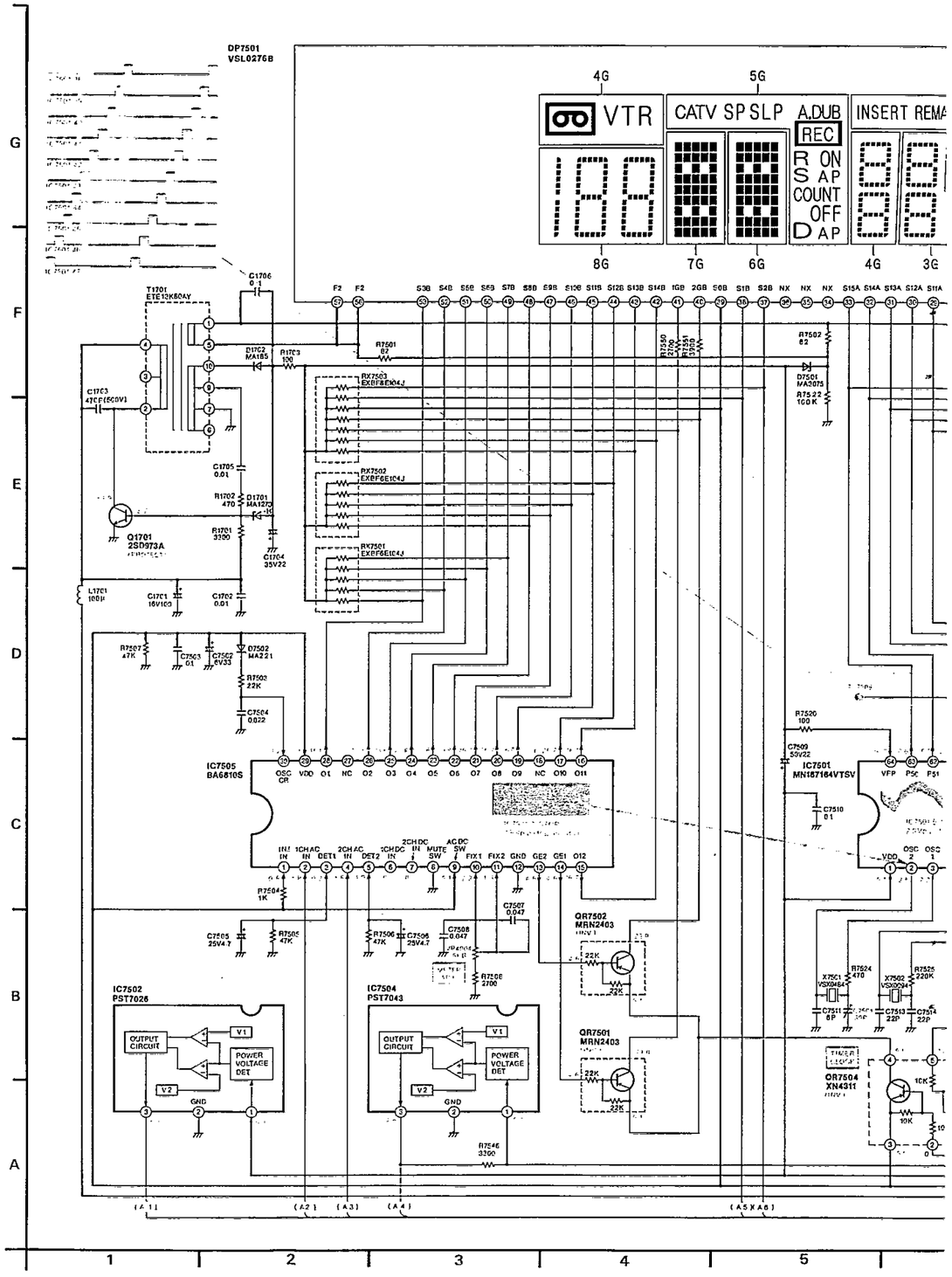


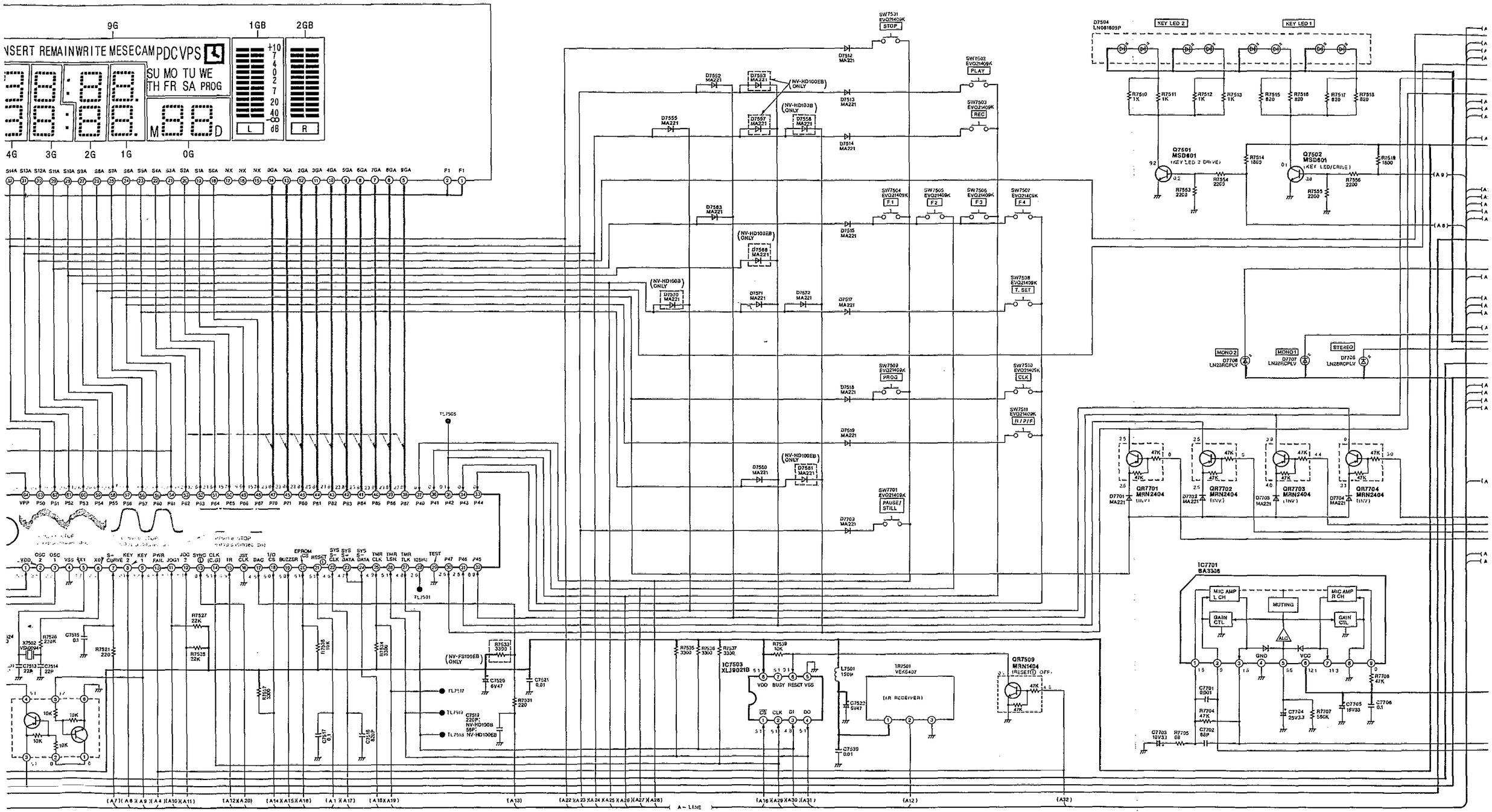
REMENT MODE OF THE DC VOLTAGE ON THIS DIAGRAM IS STOP MODE.

NOTE: DO NOT USE ANY PART NUMBER SHOWN ON THIS SCHEMATIC DIAGRAM FOR ORDERING. WHEN YOU ORDER A PART, PLEASE REFER TO PARTS LIST.

12 13 14 15

3-14. TIMER (VEP07703E: NV-HD100B) (VEP07703F: NV-HD100EB) & OPI




9G
1GB
2GB
NSERT REMAINWRITE MESECAMPDCVPS
SU MO TU WE
TH FR SA PROG
4G
3G
2G
1G
0G
SW7531 EVQ21405K STOP
SW7502 EVQ21409K PLAY
SW7503 EVQ21409K REC
SW7504 EVQ21409K F1
SW7505 EVQ21409K F2
SW7506 EVQ21409K F3
SW7507 EVQ21405K F4
SW7508 EVQ21409K T. SET
SW7509 EVQ21409K PROG
SW7510 EVQ21405K CLK
SW7511 EVQ21409K N/P/F
SW7701 EVQ21409K PAUSE/STILL
KEY LED 2
KEY LED 1
Q7501 MSD601 (KEY LED 2 DRIVE)
Q7502 MSD601 (KEY LED DRIVE)
MONO2
MONO1
STEREO
IC7701 BA3306
MIC AMP L CH
MIC AMP R CH
MUTING
GAIN CTL
ALC
IC7503 XL190218
QR7509 MRN1404 (RESET) OFF
(IR RECEIVER)
QR7701 MRN2404 (INV)
QR7702 MRN2404 (INV)
QR7703 MRN2404 (INV)
QR7704 MRN2404 (INV)
A-LINE

SEGMENT CONTROL SIGNAL —— GRID CONTROL SIGNAL TUNE CONTROL SIGNAL

KEY LED 2 KEY LED 1

R7513 1K R7511 1K R7512 1K R7513 1K R7515 820 R7516 820 R7517 620 R7518 620

Q7501 MSD601 (KEY LED 2 DRIVE)

Q7502 MSD601 (KEY LED DRIVE)

R7514 1800 R7554 2200 R7553 2200 R7519 1000 R7556 2200 R7555 2200

MONO2 D7706 LN28RCPLV

MONO1 D7707 LN28RCPLV

STEREO D7705 LN28RCPLV

QR7701 MRN2404 (INV)

QR7702 MRN2404 (INV)

QR7703 MRN2404 (INV)

QR7704 MRN2404 (INV)

D7701 MA221

D7702 MA221

D7703 MA221

D7704 MA221

IC7701 BA3308

MIC AMP L CH

MUTING

MIC AMP R CH

GAIN CTL

GAIN CTL

ALC

GND

VCC

R7708 47K C7701 0.001 R7704 47K C7702 68P C7703 10V32 R7705 68 C7704 25V3.3 R7707 560K C7705 16V32 C7706 0.1

FP7501

1	P52	
2	P53	
3		
4	P51	
5	P50	
6	P57	
7	GND	
8	P45	
9	GND	
10		
11	P40	
12	P41	
13		

P7501

1	BUZZER	P7401-12
2	S NON SW 5V	P7401-11
3	GND(A)	P7401-10
4		P7401-9
5	FS CLOCK / DAC	P7401-8
6	FS CS	P7401-7
7		P7401-6
8	TIMER BUS TLK	P7401-5
9	TIMER BUS LSN	P7401-4
10	TIMER BUS CLK	P7401-3
11	VS DATA	P7401-2
12	VS CLOCK	P7401-1

TO AUDIO SECTION P7401 (Page:3-14/D-1)

(NV-HD100EB ONLY) R7544 220

R7543 220 R7542 220 R7541 220

C7524 100P C7523 270P

P7502

1	UNREG 14V	P7402-24
2		P7402-23
3	GND	P7402-22
4		P7402-21
5	MONO2	P7402-20
6	RESET	P7402-19
7		P7402-18
8		P7402-17
9	I/O CLOCK	P7402-16
10	SYNC	P7402-15
11	I/O CS	P7402-14
12		P7402-13
13	AFC S-CURVE	P7402-12
14	MONO1	P7402-11
15	REG 12.3V	P7402-10
16	STEREO	P7402-9
17	GND	P7402-8
18	BACK UP 5V	P7402-7
19		P7402-6
20	LEVEL METER 5V	P7402-5
21	METER (R)	P7402-4
22	METER (L)	P7402-3
23	R CH	P7402-2
24	L CH	P7402-1

TO AUDIO SECTION P7402 (Page:3-14/D-1)

R7532 220 R7540 220 R7529 220

(NV-HD10CEB ONLY)

(NV-HD100B ONLY)

P7701

1	SHUTTLE 1	
2	SHUTTLE 2	
3	SHUTTLE 3	
4	SHUTTLE 4	
5	GND	
6	JOG 1	
7	JOG 2	

JOG / SHUTTLE ENCODER UNIT (VSQ0822)

P7702

4	MIC	TO AUDIO SECTION P4011 (Page:3-14/F-23)
3	REG 12.3V	
2	MIC IN	
1	GND (A)	

C7709 1 R7702 220K R7706 4700 C7707 0.1 TO BOTTOM PLATE

P7703

1	GND (A)	
2	MIC IN	
3	REG 12.3V	
4	MIC	

FS4SC1

1	GND (A)	
2	MIC IN	
3	REG 12.3V	
4	MIC	

MIC JACK J4501 VJJ0261

MIC JACK C.B.A. (VEP00582A)

P6501

12	GND	12	P4013-3
11	REC VR (C)	11	P4013-2
10	REC VR (L,R)	10	P4013-1
9	GND	9	P6005-9
8	LEVEL METER 5V	8	P6005-8
7	MONO	7	P6005-7
6		6	P6005-6
5	EDIT	5	P6005-5
4	PICTURE CTL	4	P6005-4
3	MIX	3	P6005-3
2		2	P6005-2
1		1	P6005-1

TO AUDIO SECTION P4013 (Page:3-14/E-20)

TO AUDIO SECTION P6005 (Page:3-14/D-20)

R6504 240 R6505 68 R6503 1800 C6501 0.1

D6507 1SS254 D6506 1SS254 D6505 1SS254 D6505 1SS254

A DUB SW6504 EVQ21409K

PAL/ MESECAM SW6503 EVQ21409K (NV-HD100EB ONLY)

EJECT SW6502 EVQ21409K

POWER SW6501 EVQ21409K

INSERT SW6505 EVQ21409K

D6505 1SS254

EDIT SW6506 ESD170206 ON OFF (NV-HD10CB ONLY)

REMOTE MODE SW6507 ESD170206 VTR2 VTR1

SW6508 ESD170206 MONO NICAM

HI-FI/NORMAL MIX SW6509 ESD170206 ON OFF

OPERATION C.B.A. (VEP06852G:NV-HD100B) (VEP06852P:NV-HD100EB)

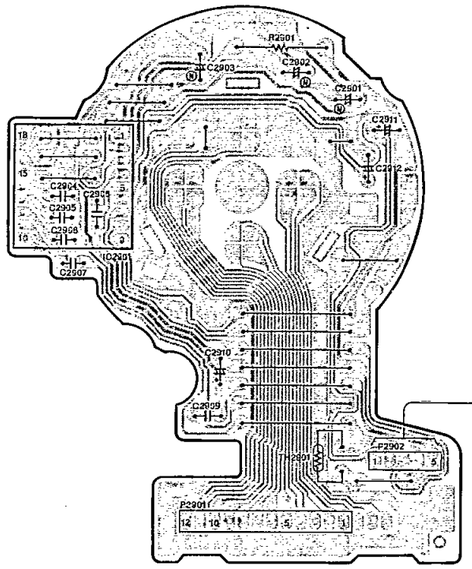
NOTE: THE MEASUREMENT MODE OF THE DC VOLTAGE ON THIS DIAGRAM IS STOP MODE.

NOTE: DO NOT USE ANY PART NUMBER SHOWN ON THIS SCHEMATIC DIAGRAM FOR ORDERING. WHEN YOU ORDER A PART, PLEASE REFER TO PARTS LIST.

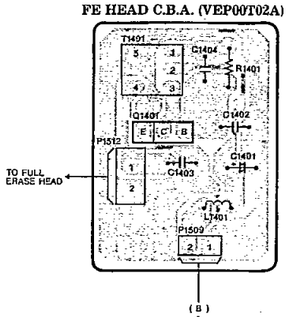
15 16 17 18 19 20 21 22 23 24 25 26

3-15. MAIN C.B.A. (VEP03977H: NV-HD100B) (VEP03977J: NV-HD100EB)

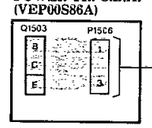
CYLINDER DRIVE C.B.A. (VEX0126)



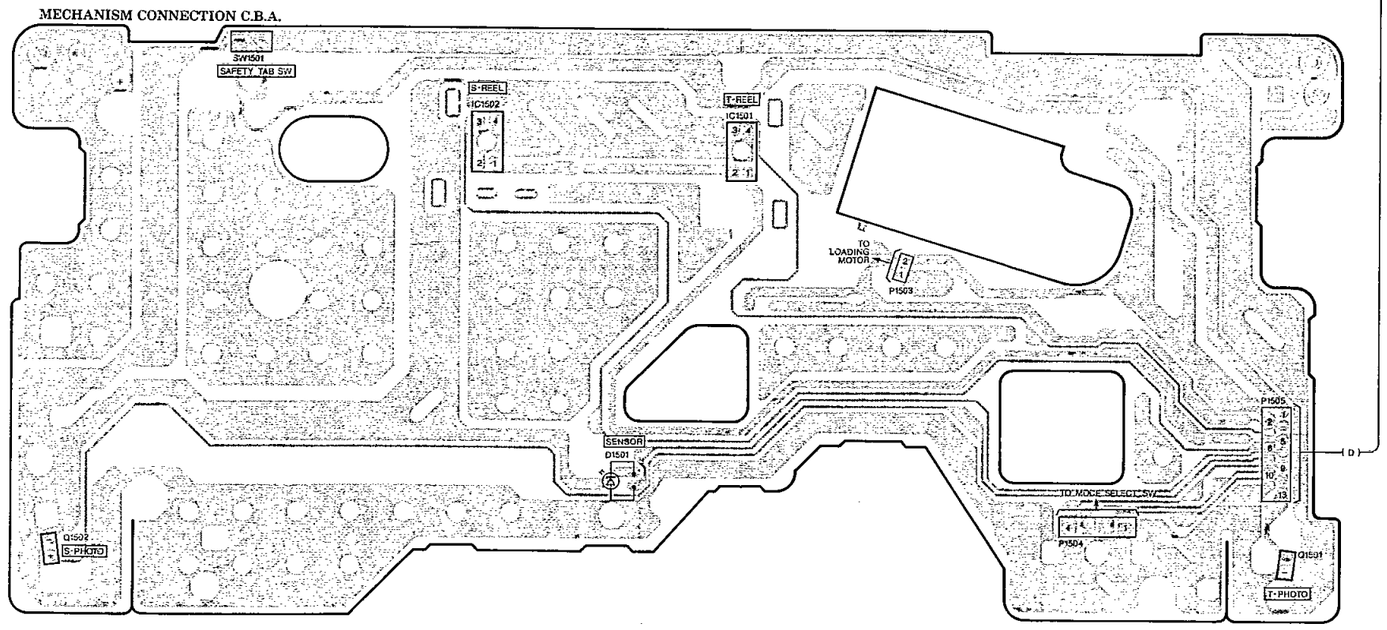
FE HEAD C.B.A. (VEP00T02A)



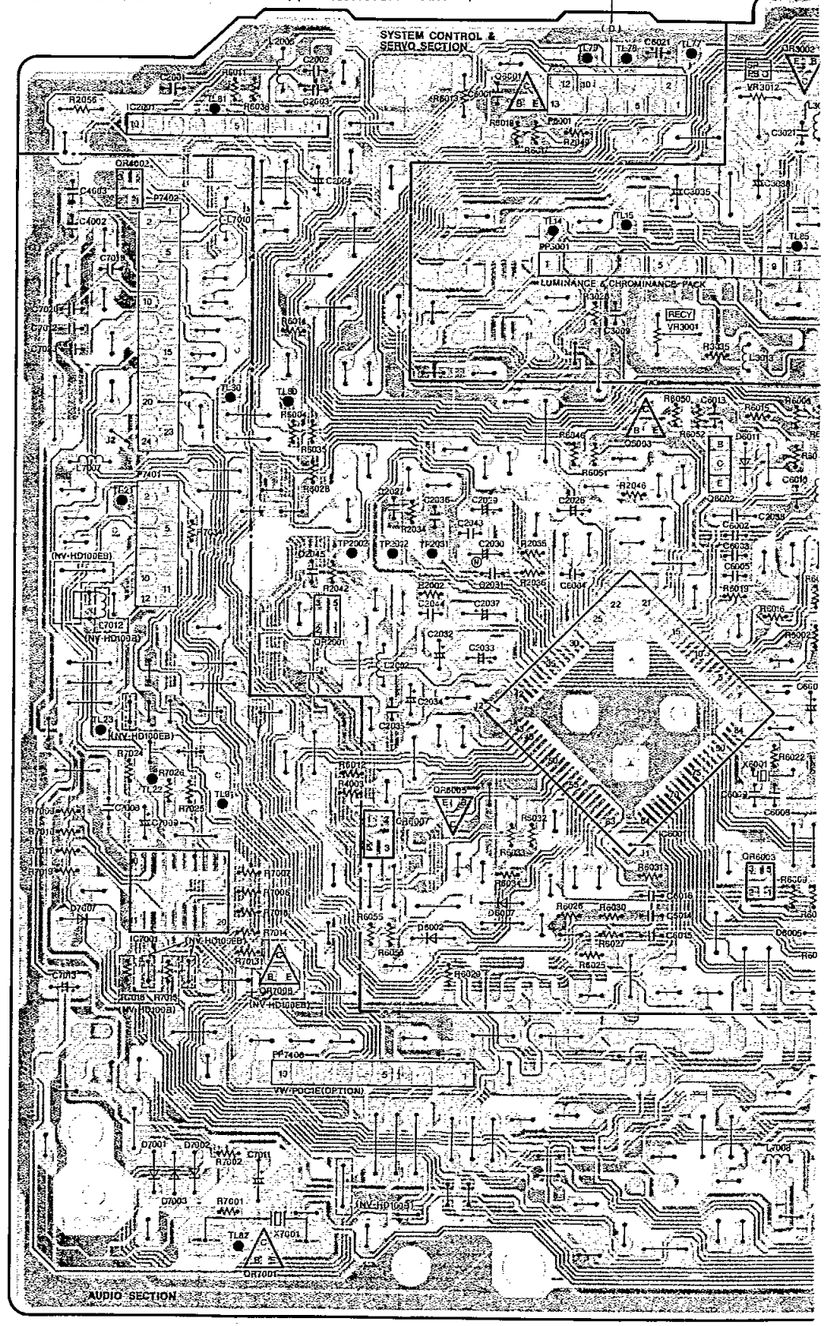
POWER TR. C.B.A. (VEP00S86A)



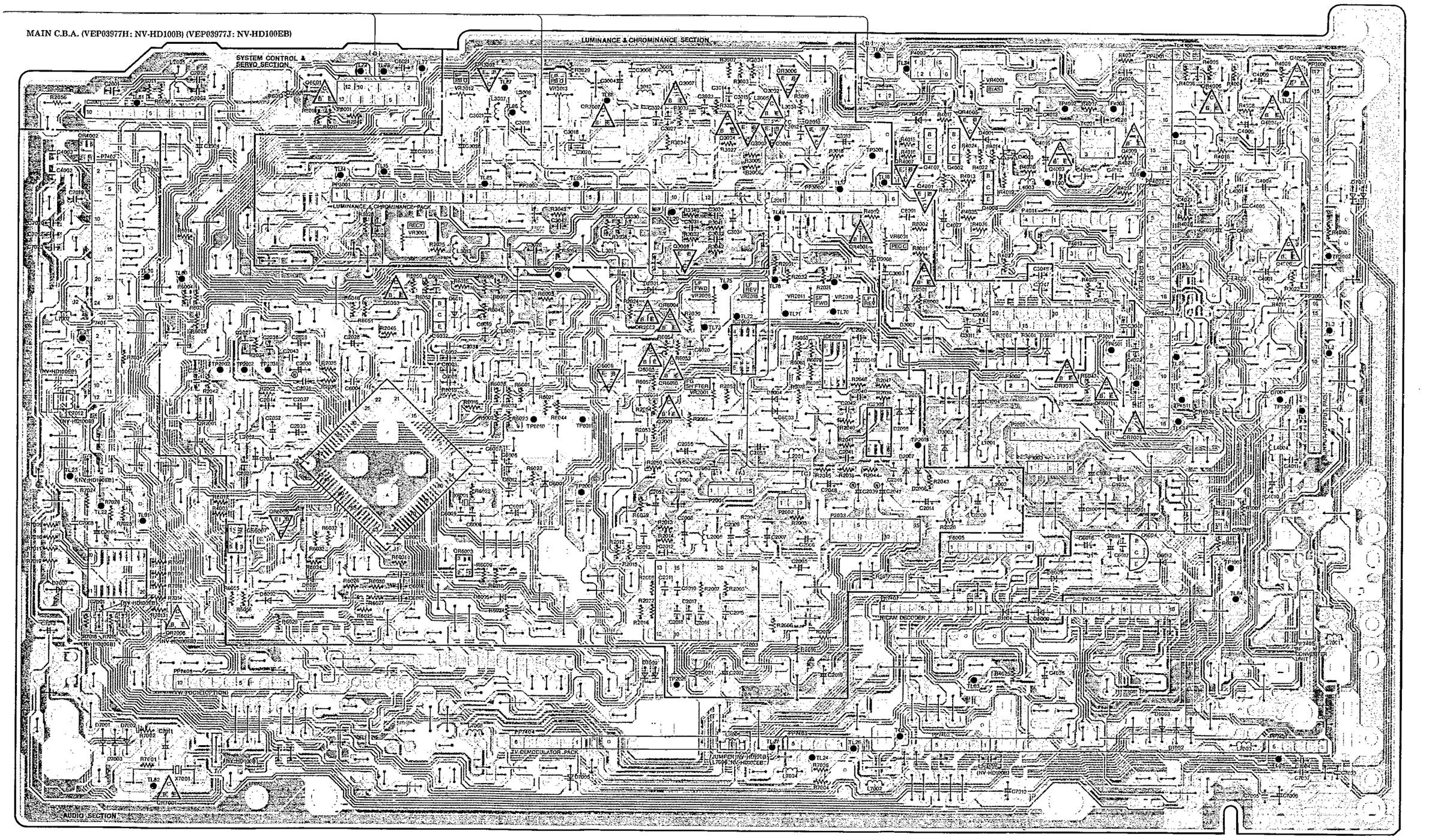
MECHANISM CONNECTION C.B.A.



MAIN C.B.A. (VEP03977H: NV-HD100B) (VEP03977J: NV-HD100EB)



MAIN C.B.A. (VEP03977H: NV-HD100B) (VEP03977J: NV-HD100EB)



8 9 10 11 12 13 14 15 16 17 18

MAIN C.B.A. ADDRESS INFORMATION

SYSTEM CONTROL & SERVO Section	
Transistor	
Q1501	A-7
Q1502	A-1
Q1503	E-6
Q2001	D-12
Q6001	F-10
Q6002	E-11
Q6003	E-10
Q6004	C-16
Q6005	D-12
Q6006	D-12
Transistor & Resistor	
QR2001	D-9
QR2002	E-12
QR6003	C-11
QR6004	E-12
QR6005	C-9
QR6007	C-9
QR6010	D-12
QR6011	D-18
Integrated Circuit	
IC1501	C-4
IC1502	C-3
IC2001	F-8
IC2002	E-13
IC2003	B-13
IC2005	D-14
IC2901	F-1
IC6001	C-10
IC6009	D-14
Test Point	
TP2001	C-12
TP2002	D-9
TP2009	E-11
TP2015	D-14
TP2026	B-12
TP2031	D-9
TP2032	D-9
TP6010	D-11
TP6011	D-12
Adjustment	
VR2001	D-13
VR2006	E-13
VR2011	E-13
VR2018	E-13
VR2019	E-14
Connector	
P1503	B-5
P1504	A-6
P1505	B-7
P1506	E-6
P2001	C-13
P2002	C-13
P2003	C-14
P2901	E-2
P2902	E-2
P6001	F-10

ADDRESS INFORMATION

LUMINANCE & CHROMINANCE Section	
Transistor	
Q3001	F-13
Q3002	F-13
Q3003	F-13
Q3004	F-13
Q3007	F-12
Q3009	E-12
Q3010	F-13
Q8001	E-14
Transistor & Resistor	
QR3001	D-15
QR3002	G-11
QR3006	G-13
QR3007	F-12
Test Point	
TP3001	F-14
TP3082	E-17
Adjustment	
VR3001	E-10
VR3012	F-11
VR3013	F-11
VR8001	E-14
Connector	
P3001	E-16
PP3001	F-10
PP3002	F-11
PP3003	F-14

ADDRESS INFORMATION

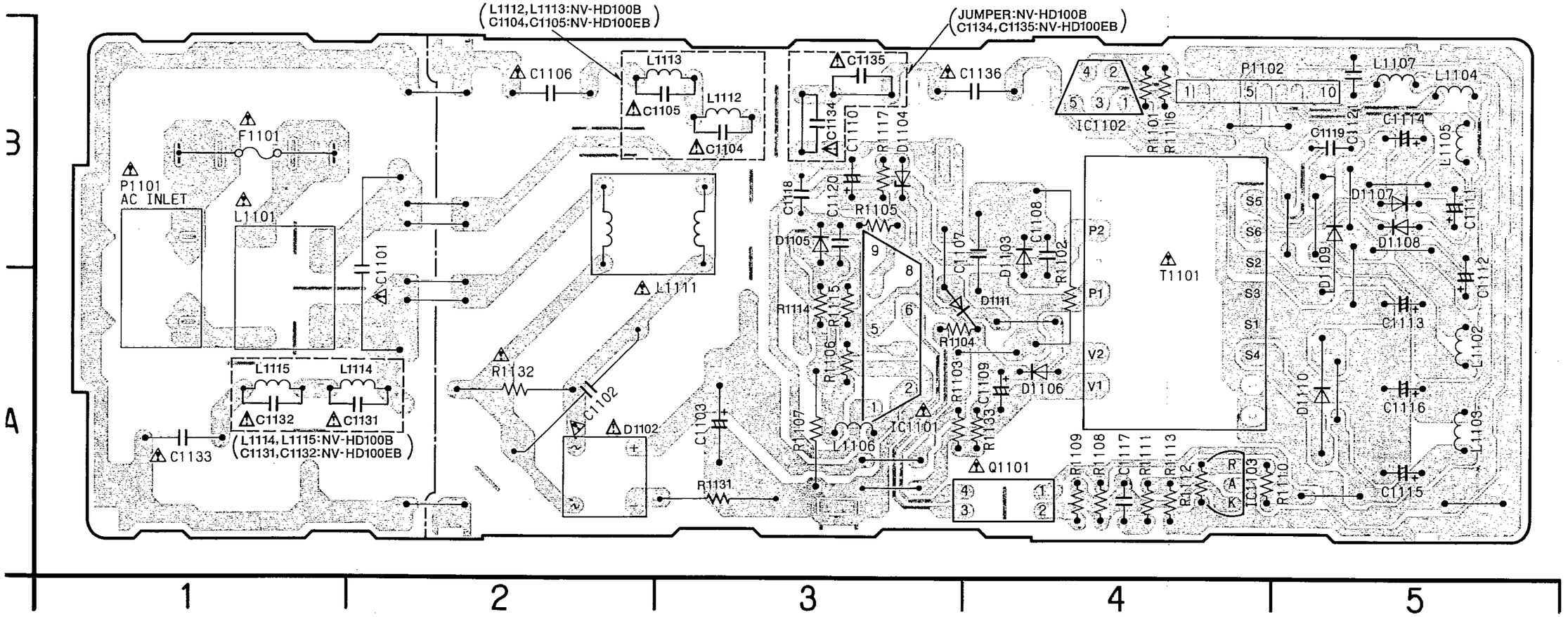
AUDIO Section	
Transistor	
Q1401	F-5
Q4001	F-14
Q4002	F-15
Q4003	F-15
Q4004	F-17
Q4005	G-17
Q4006	E-17
Q4007	F-14
Q4008	F-15
Q4009	F-16
Transistor & Resistor	
QR1001	C-17
QR4001	E-14
QR4002	F-8
QR4005	F-15
QR4006	F-17
QR4007	F-14
QR7001	A-8
QR7005	D-16
QR7006	B-8
Integrated Circuit	
IC7001	C-8
Test Point	
TP1001	D-17
TP1002	C-17
TP4002	F-15
TP4003	F-16
TP4501	E-16
TP4511	D-18
Adjustment	
VR4001	G-15
Connector	
P1001	D-15
P1002	D-15
P1003	D-15
P1509	F-5
P1512	F-5
P4002	F-14
P4003	G-14
P4011	F-15
P4013	E-16
P6005	C-15
P7401	E-8
P7402	F-8
PK7407	C-14
PK7408	C-16
PP3005	E-17
PP3006	G-17
PP4001	G-16
PP4002	F-16
PP4003	E-16
PP7401	A-17
PP7402	A-14
PP7403	A-13
PP7404	A-11
PP7405	B-17
PP7406	B-9

ADDRESS INFORMATION

3-16. POWER C.B.A. (VEP01487H: NV-HD100B) (VEP01487K: NV-HD100EB)

POWER C.B.A.	
Transistor	
Q1101	A-4
Integrated Circuit	
IC1101 IC1102 IC1103	A-3 B-4 A-4
Connector	
P1101 P1102	B-1 B-4

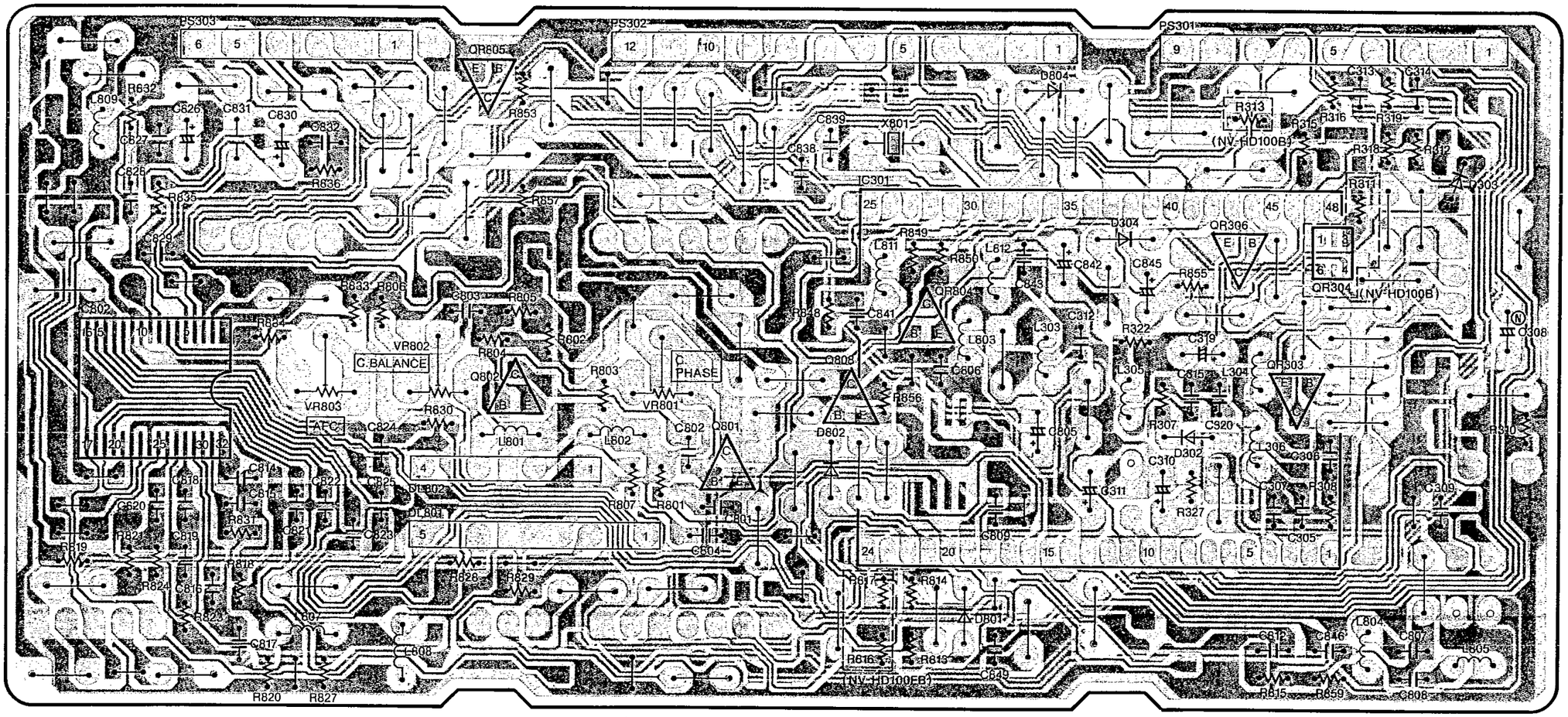
ADDRESS INFORMATION



17. LUMINANCE & CHROMINANCE PACK C.B.A. (VEP03975H: NV-HD100B) (VEP03975J: NV-HD100EB)

LUMINANCE & CHROMINANCE PACK C.B.A.			
Transistor		**Adjustment**	
Q801	B-3	VR601	B-3
Q802	B-2	VR802	B-2
Q808	B-4	VR803	B-2
Transistor & Resistor		**Connector**	
QR303	B-5	PS301	C-5
QR304	B-5	PS302	C-3
QR306	B-5	PS303	C-1
QR804	B-4		
QR805	C-2		
Integrated Circuit			
IC301	B-4		
IC802	B-1		

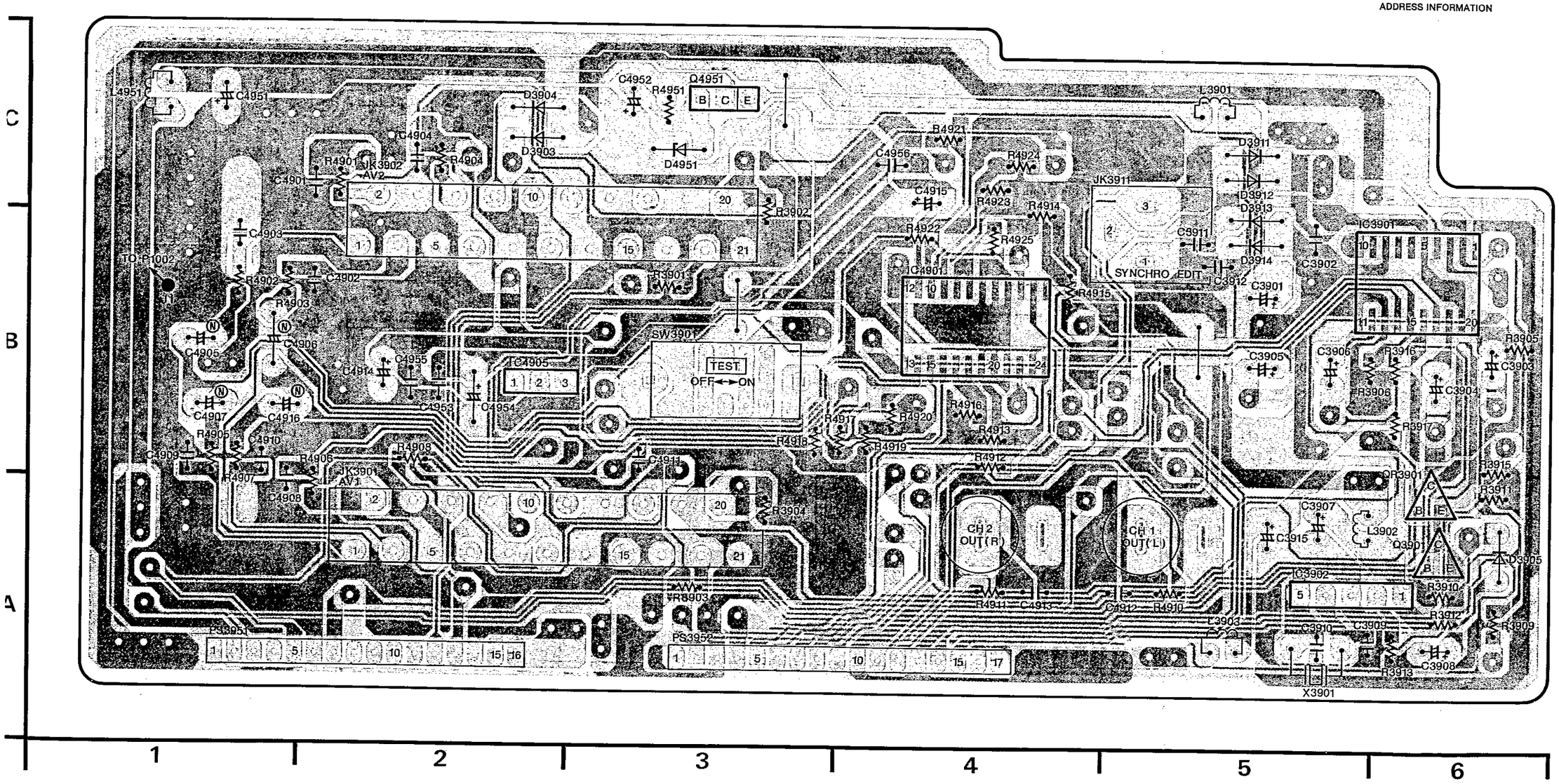
ADDRESS INFORMATION



3-18. INPUT/OUTPUT PACK C.B.A. (VEP03985A: NV-HD100B)

INPUT/OUTPUT PACK C.B.A.	
Transistor	
Q3901 Q4951	A-6 C-3
Transistor & Resistor	
QR3901	B-6
Integrated Circuit	
IC3901 IC3902 IC4901 IC4905	B-6 A-5 B-4 B-2
Connector	
PS3951 PS3952	A-1 A-3

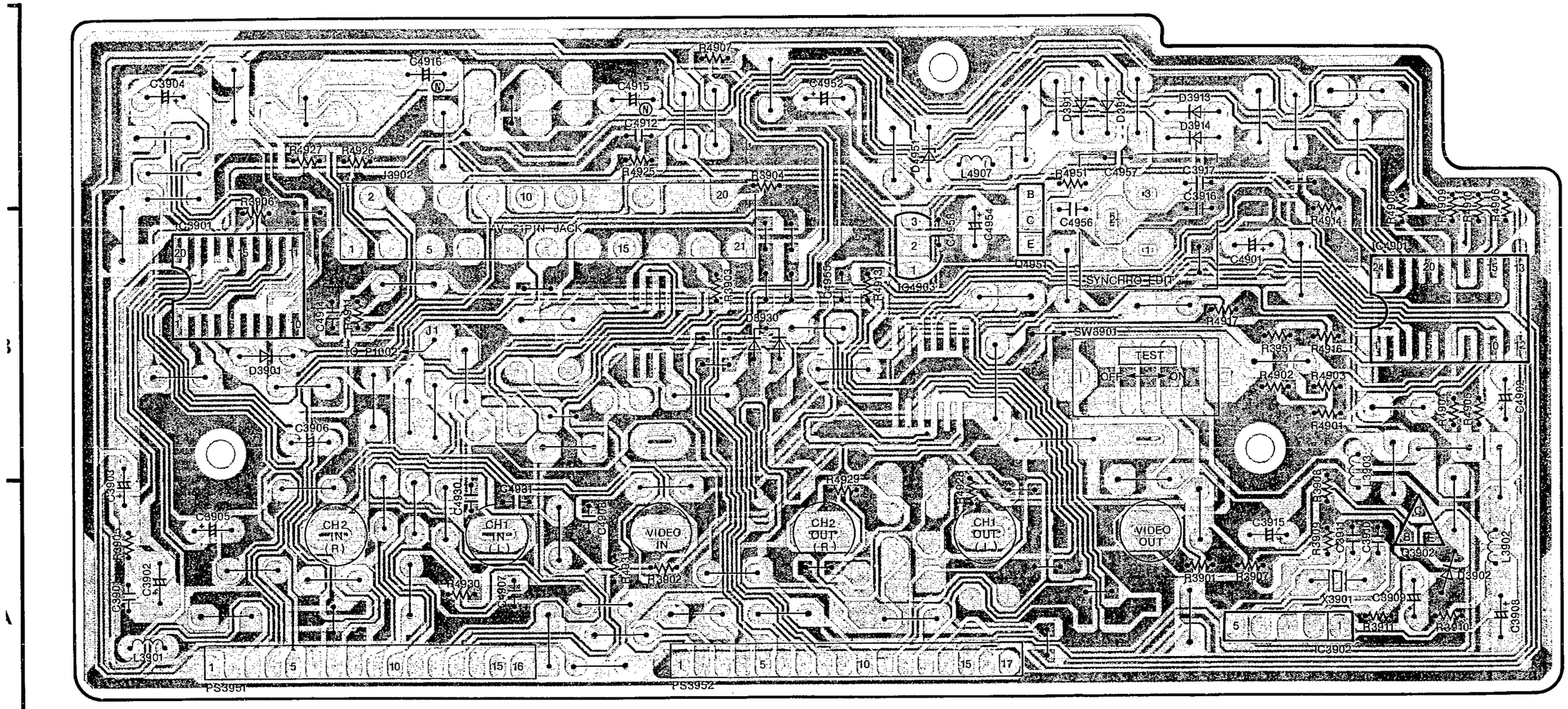
ADDRESS INFORMATION



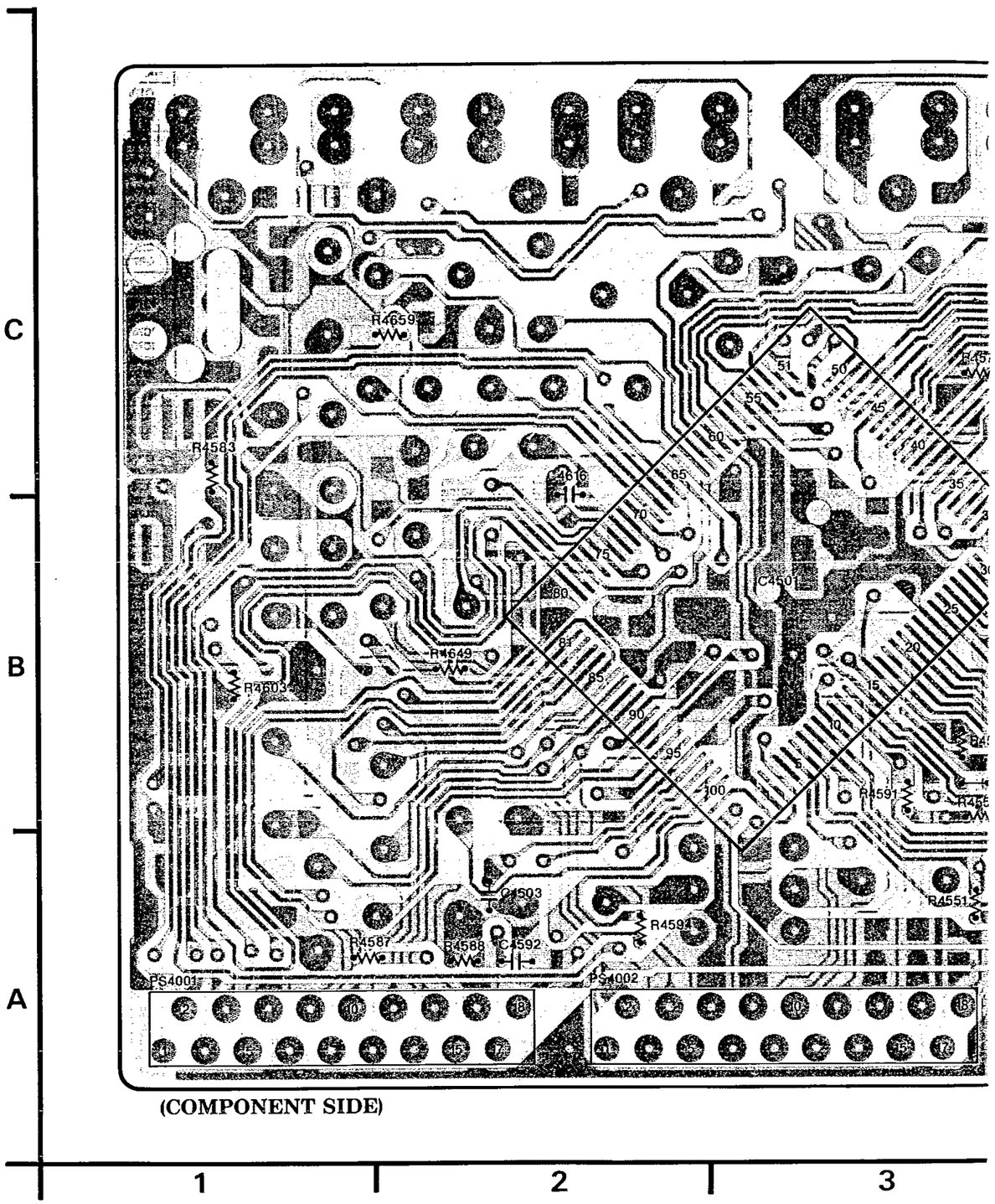
19. INPUT/OUTPUT PACK C.B.A. (VEP03979B: NV-HD100EB)

INPUT/OUTPUT PACK C.B.A.	
Transistor	
Q3902 Q4951	A-6 B-4
Integrated Circuit	
IC3901 IC3902 IC4901 IC4903	B-1 A-5 B-6 B-4
Connector	
PS3951 PS3952	A-1 A-3

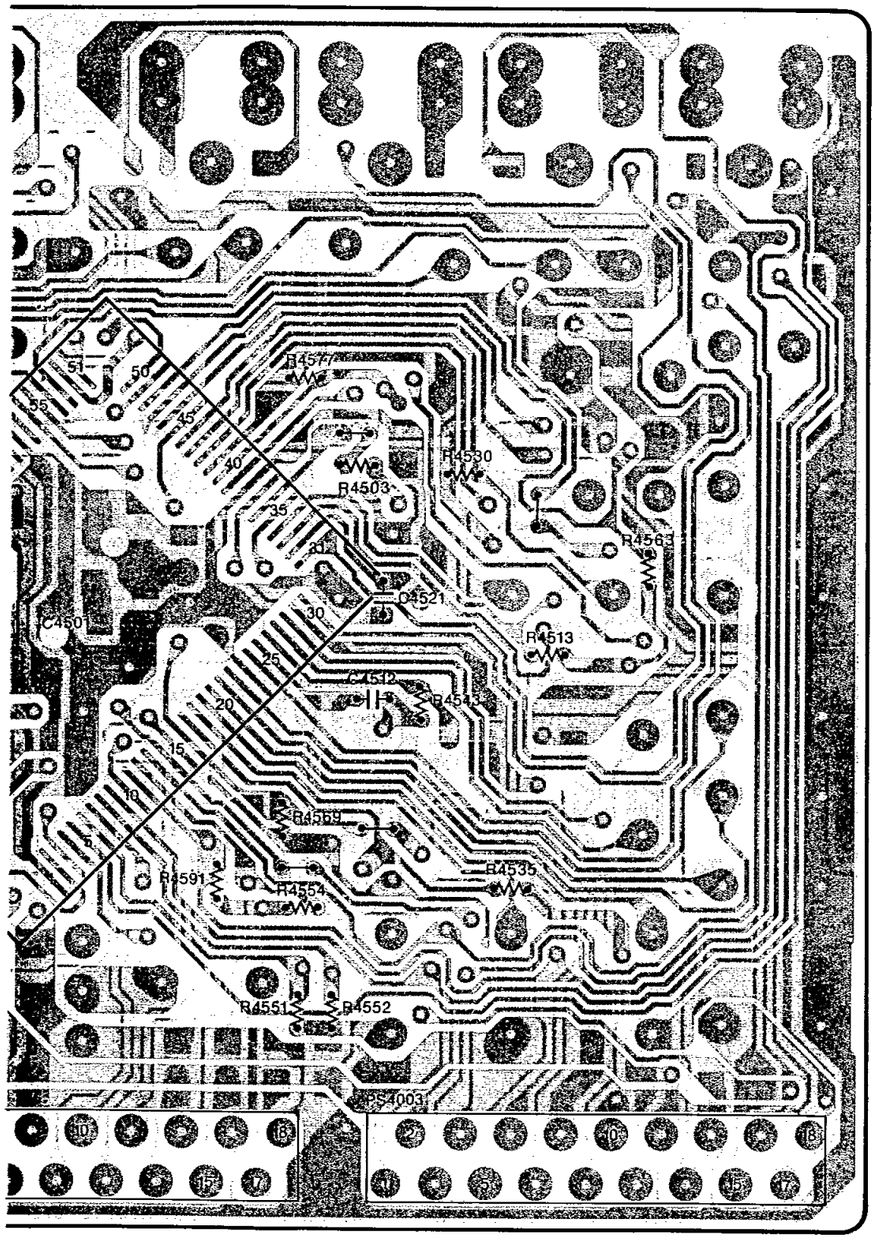
ADDRESS INFORMATION

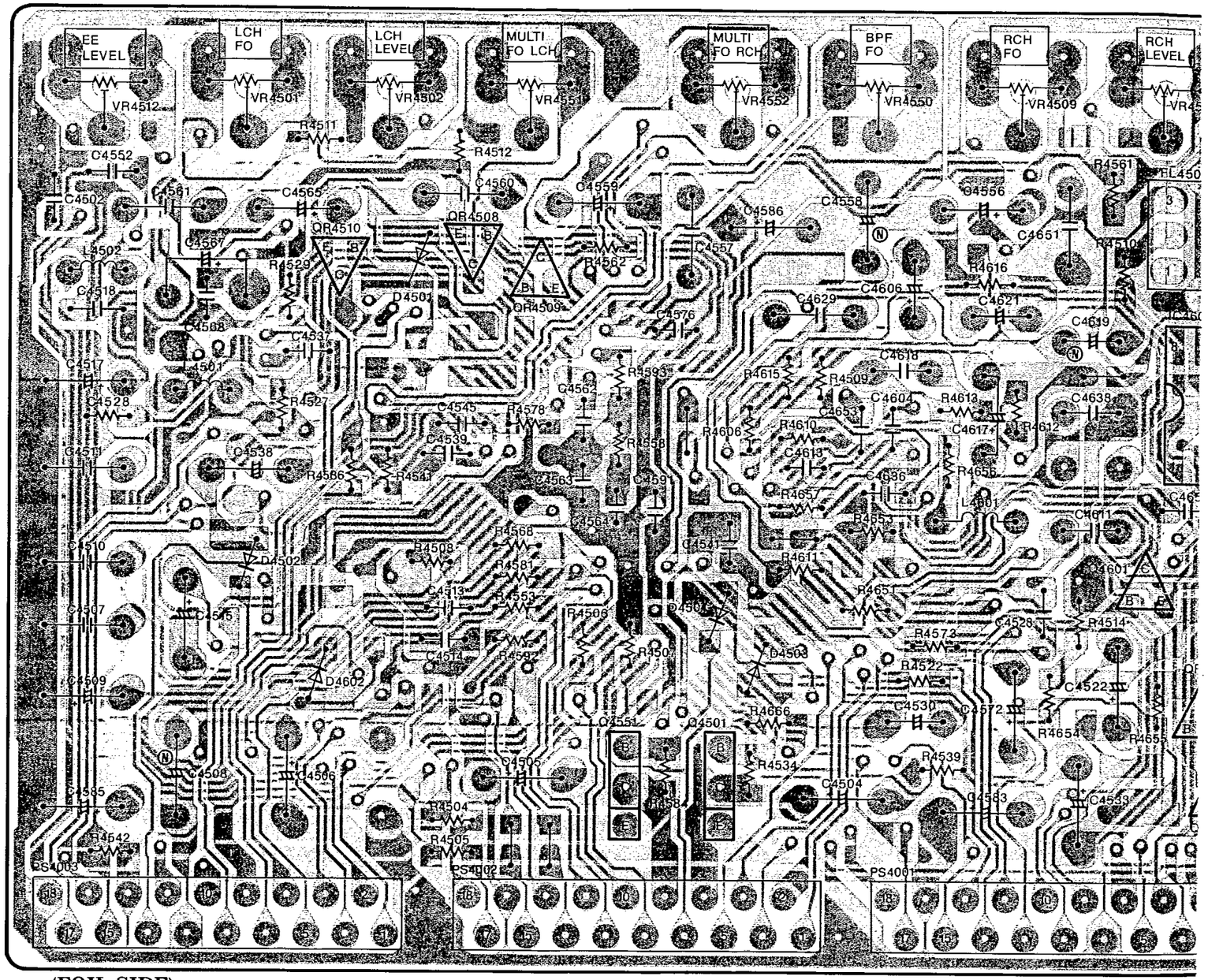


3-20. Hi-Fi AUDIO PACK C.B.A. (VEP04361R)



(COMPONENT SIDE)

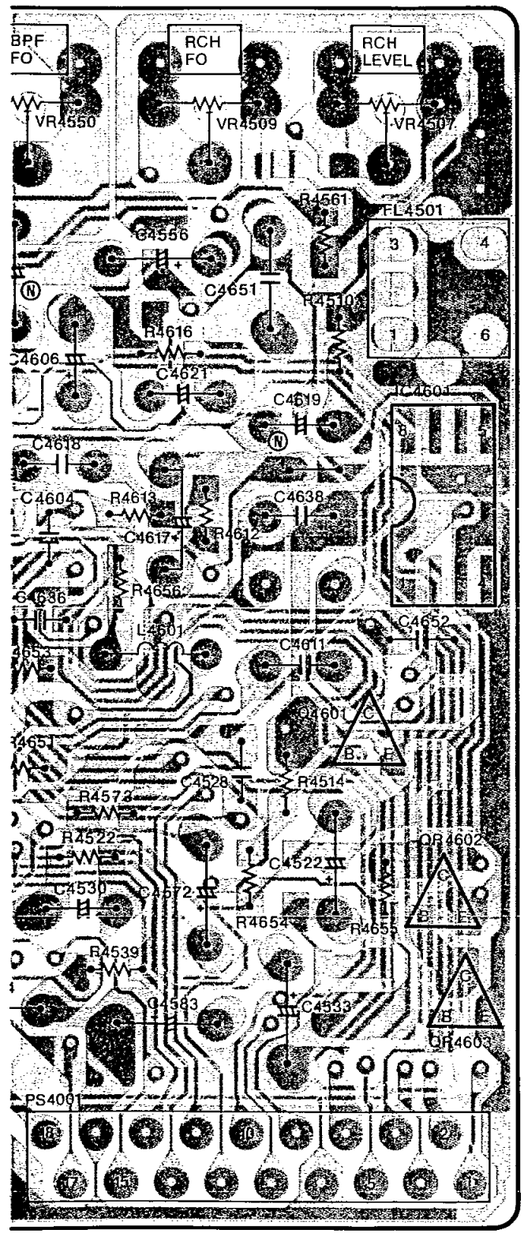




(FOIL SIDE)

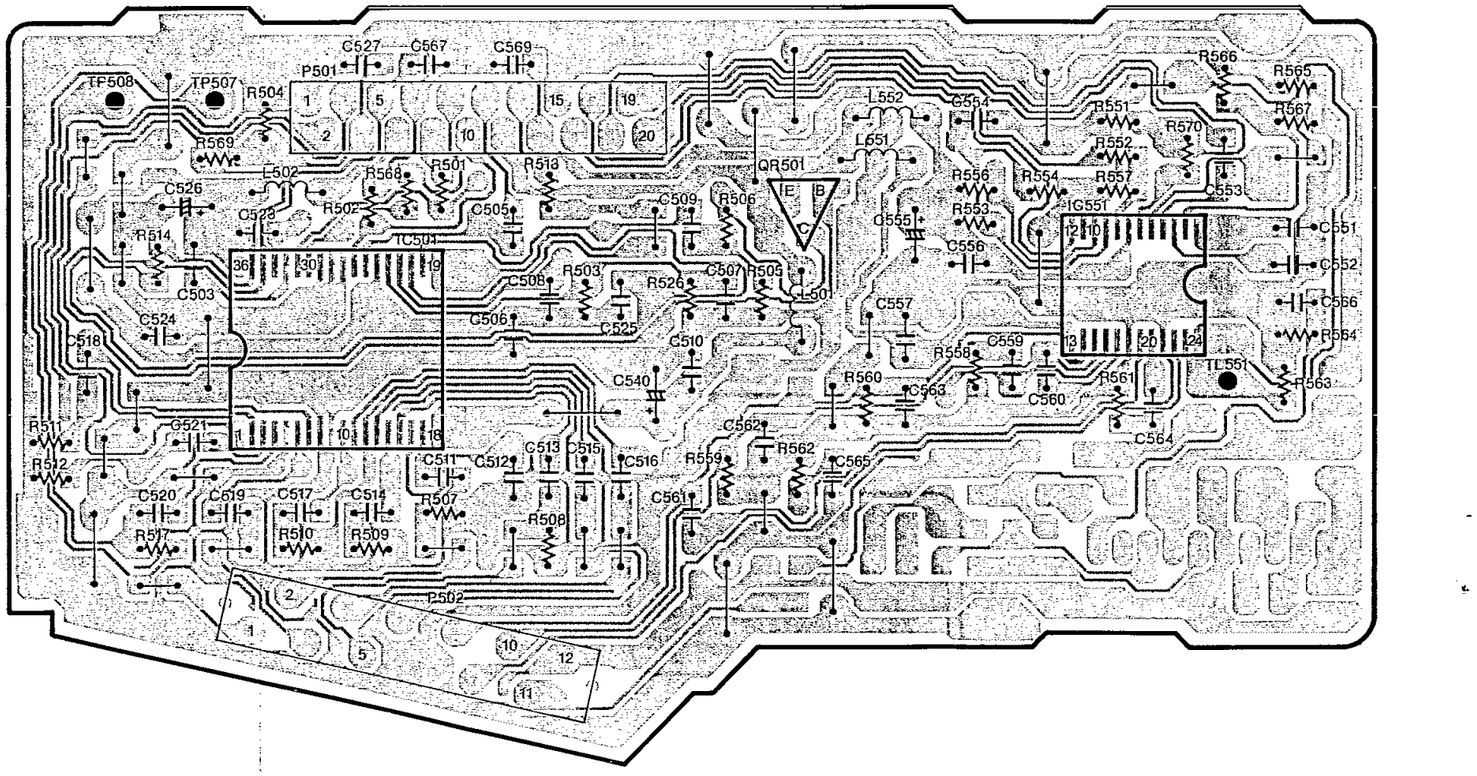
3 4 5 6 7 8

3-21. HEAD AMP C.B.A. (VEP05176C)



Hi-FI AUDIO PACK C.B.A.	
Transistor	
Q4501	A-7
Q4551	A-7
Q4601	B-8
Transistor & Resistor	
QR4508	C-6
QR4509	C-7
QR4510	C-6
QR4602	B-6
QR4603	A-8
Integrated Circuit	
IC4501	B-3
IC4601	C-8
Adjustment	
VR4501	C-6
VR4502	C-6
VR4507	C-8
VR4509	C-8
VR4512	C-5
VR4550	C-8
VR4551	C-7
VR4552	C-7
Connector	
PS4001	A-1
PS4001	A-8
PS4002	A-2
PS4002	A-7
PS4003	A-4
PS4003	A-5

ADDRESS INFORMATION

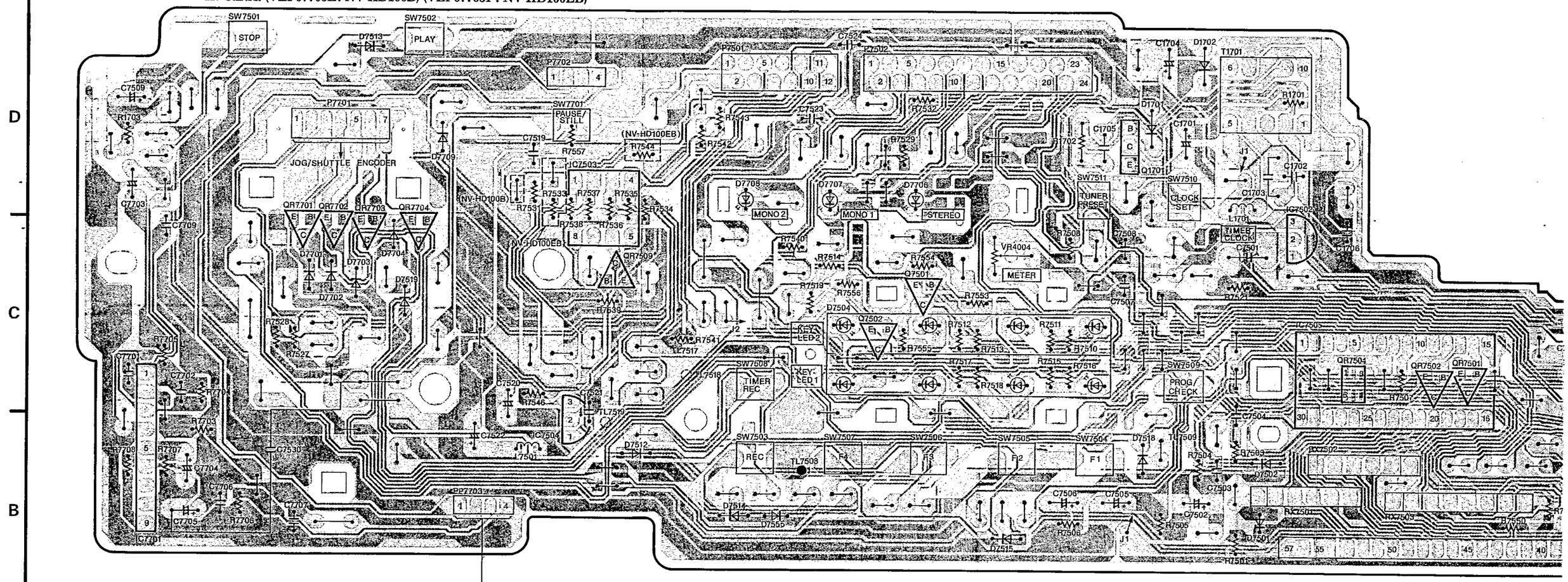


HEAD AMP C.B.A.	
Transistor & Resistor	
QR501	B-3
Integrated Circuit	
IC501	B-1
IC551	B-4
Test Point	
TL551	B-4
TP507	B-1
TP508	B-1
Connector	
P501	B-2
P502	A-1

ADDRESS INFORMATION

3-22. TIMER C.B.A. (VEP07703E: NV-HD100B) (VEP07703F: NV-HD100EB) & OPERATION C.B.A. (VEP06852G: NV-HD100B) (VEP06852P: NV-HD100EB)

TIMER C.B.A. (VEP07703E: NV-HD100B) (VEP07703F: NV-HD100EB)

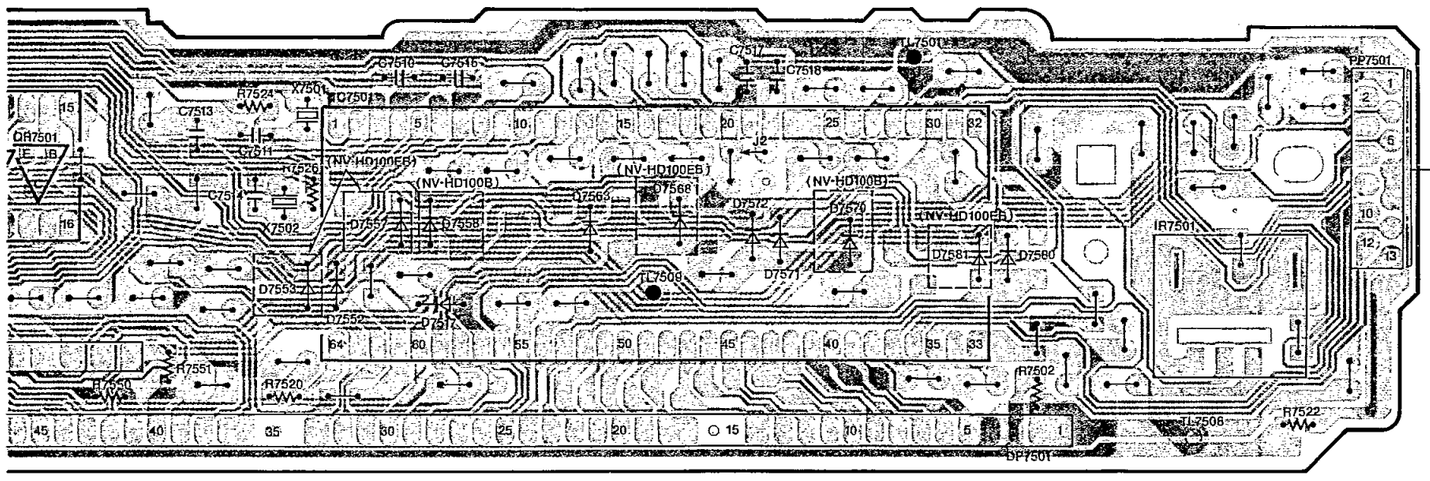


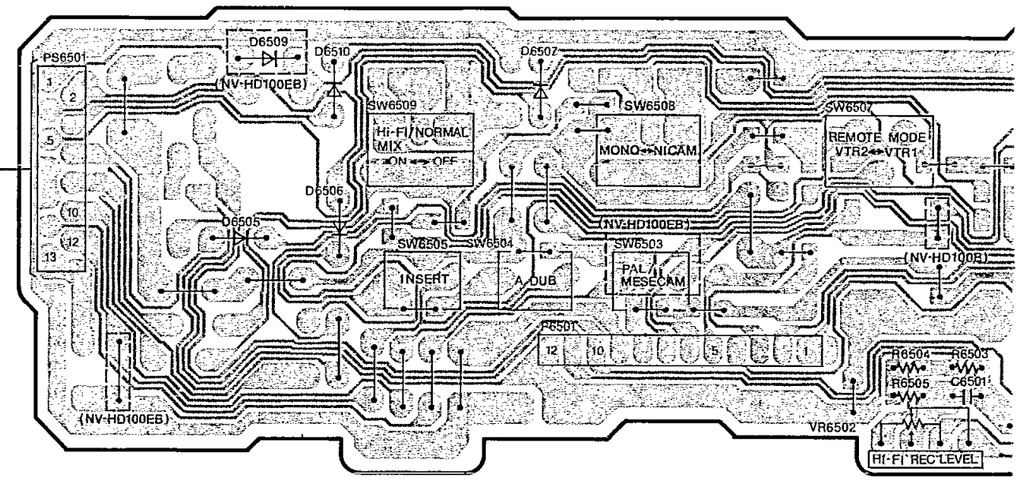
MIC JACK C.B.A. (VEP00S82A)

ON C.B.A.

& HEAD AMP C.B.A.

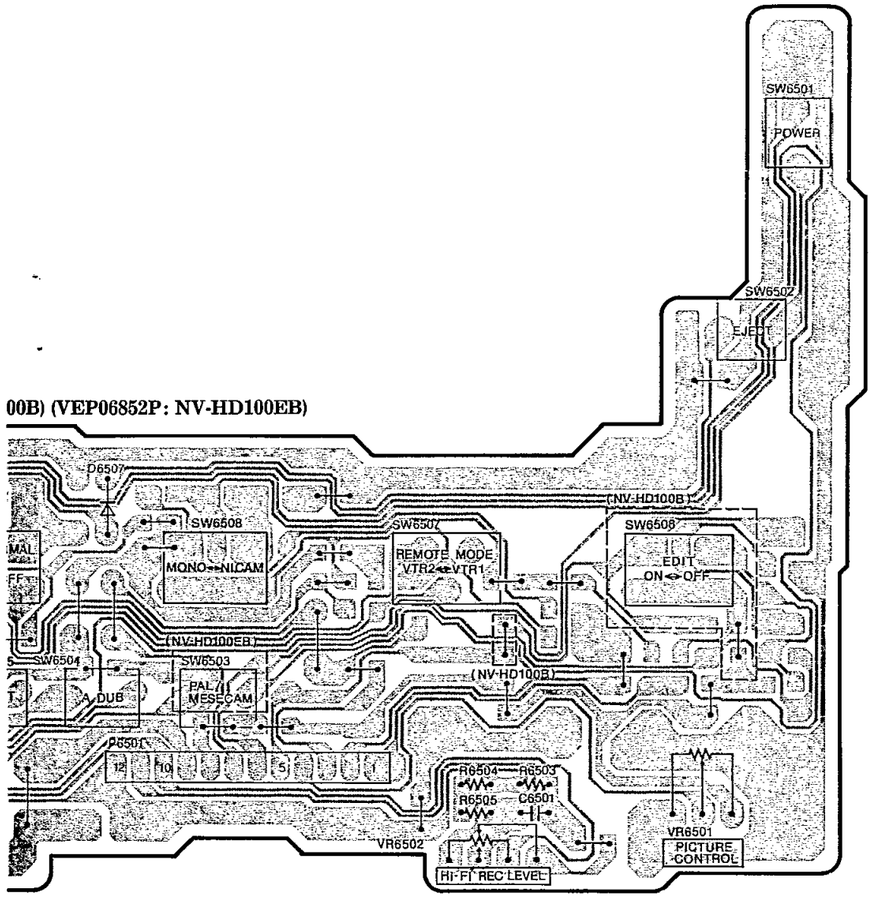
OPERATION C.B.A. (VEP06852G: NV-HD100B) (VEP06852P: NV-HD100EB)





8 9 10 11 12 13 14 15

00B) (VEP06852P: NV-HD100EB)



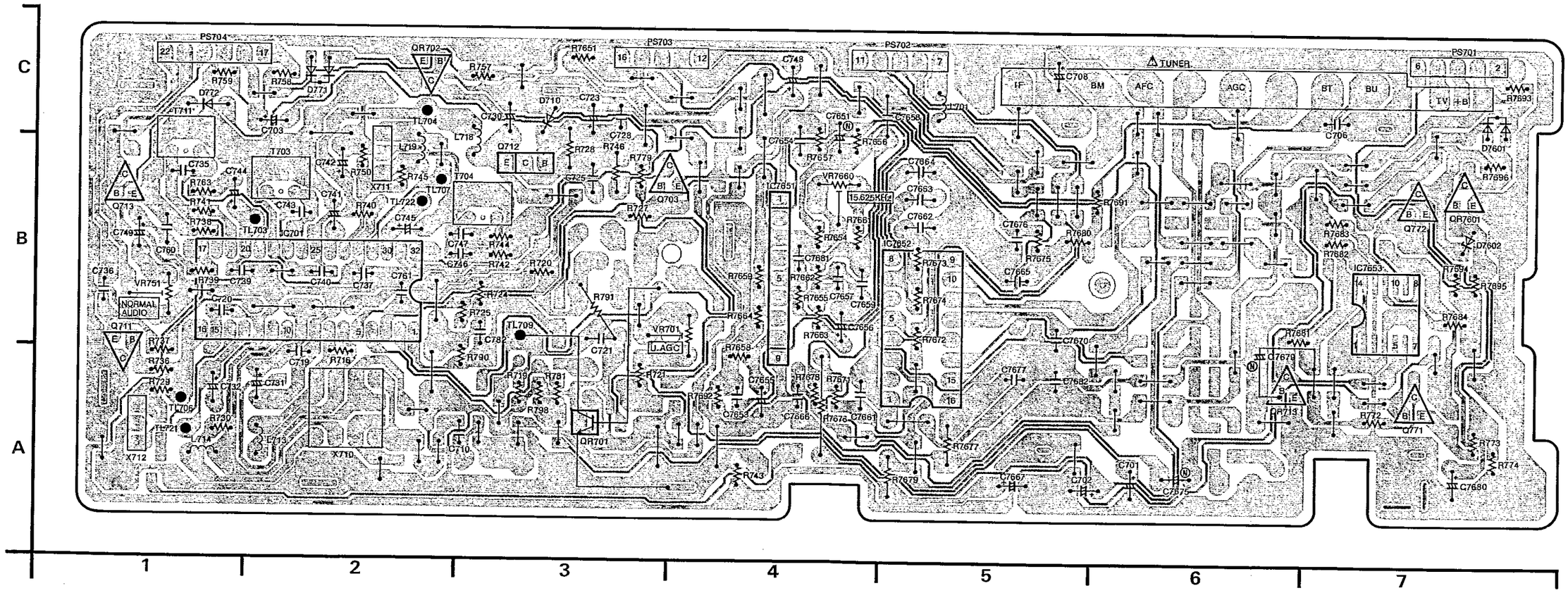
TIMER C.B.A. & OPERATION C.B.A.	
Transistor	
Q1701	D-6
Q7501	C-5
Q7502	C-5
Transistor & Resistor	
QR7501	C-8
QR7502	C-8
QR7504	C-7
QR7509	C-4
QR7701	C-2
QR7702	C-2
QR7703	C-2
QR7704	C-2
Integrated Circuit	
IC7501	C-9
IC7502	C-7
IC7503	D-3
IC7504	B-3
IC7505	C-7
IC7701	B-1
Test Point	
TL7501	C-11
TL7508	B-4
TL7508	B-12
TL7509	B-6
TL7509	B-10
TL7517	C-4
TL7518	C-4
TL7519	B-3
Adjustment	
C7501	C-7
VR4004	C-5
VR6501	B-16
VR6502	B-15
Connector	
P6501	B-14
P7501	D-4
P7502	D-5
P7701	D-2
P7702	D-3
PP7501	C-12
PP7703	B-3
PS4801	A-3
PS6501	C-13

ADDRESS INFORMATION

3-23. TV DEMODULATOR PACK C.B.A. (VEP07680F: NV-HD100B)

TV DEMODULATOR PACK C.B.A.			
Transistor		TL706	A-1
Q703	B-3	TL707	B-2
Q711	B-1	TL709	B-3
Q712	B-3	TL721	A-1
Q713	B-1	TL722	B-2
Q771	A-7	**Adjustment**	
Q772	B-7	T703	B-2
Transistor & Resistor		T704	B-3
QR701	A-3	T711	C-1
QR702	C-2	VR701	B-4
QR713	A-6	VR751	B-1
QR7601	B-7	VR7660	B-4
Integrated Circuit		**Connector**	
IC701	B-2	PS701	C-7
IC7651	B-4	PS702	C-5
IC7652	B-5	PS703	C-3
IC7653	B-7	PS704	C-1
Test Point			
TL703	B-2		
TL704	C-2		

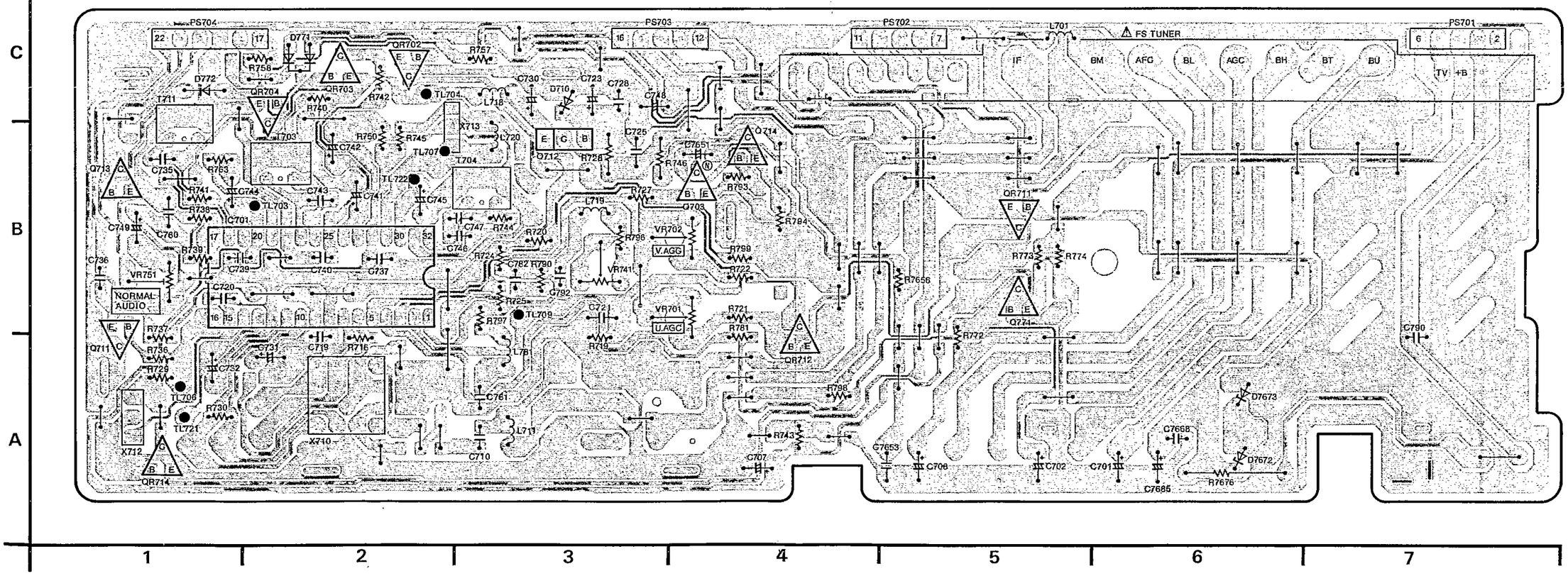
ADDRESS INFORMATION



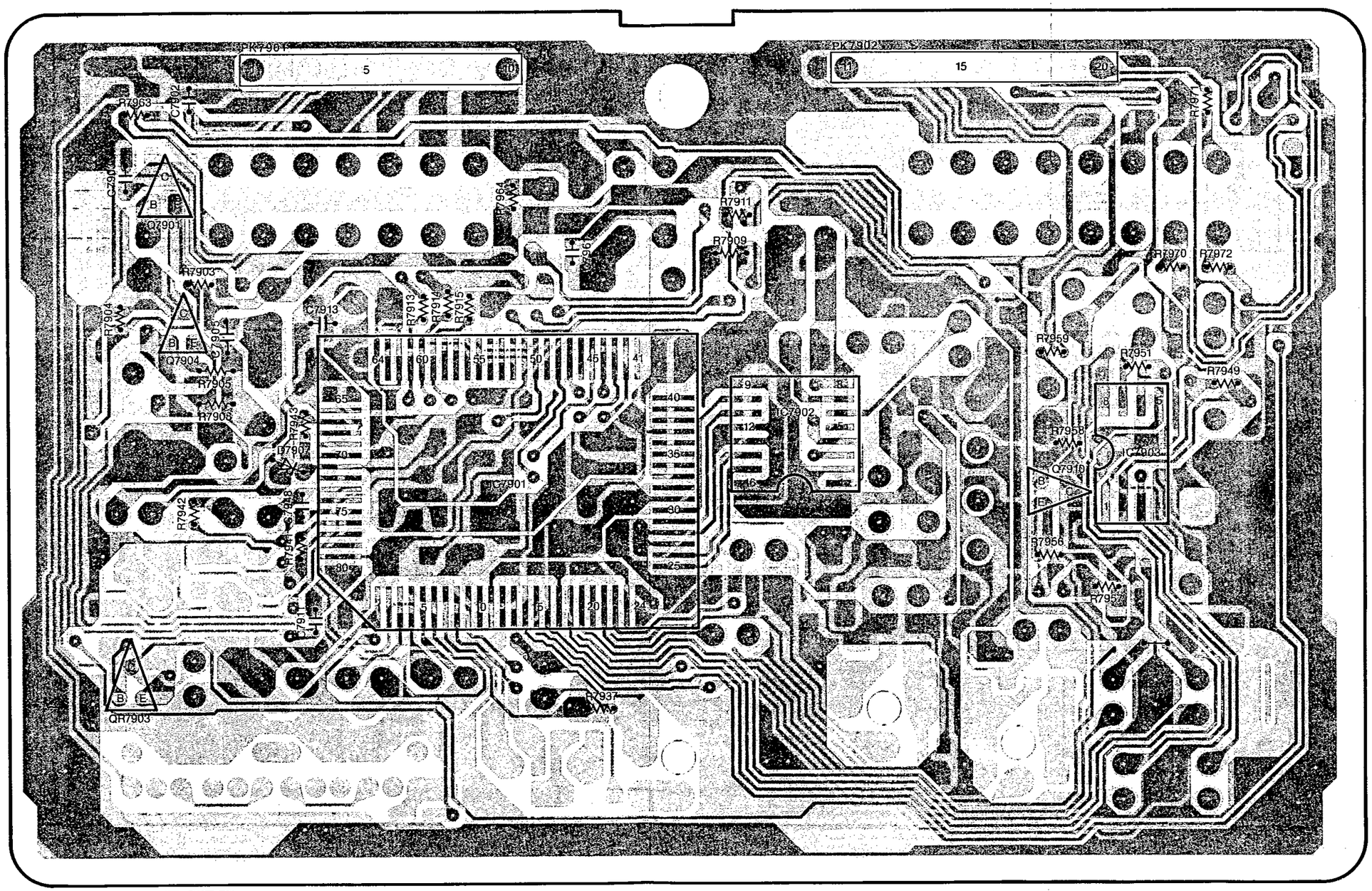
3-24. TV DEMODULATOR PACK C.B.A. (VEP07684D: NV-HD100EB)

TV DEMODULATOR PACK C.B.A.			
Transistor		TL706	A-1
Q703	B-4	TL707	B-2
Q711	A-1	TL709	B-3
Q712	B-3	TL721	A-1
Q713	B-1	TL722	B-2
Q714	B-4	**Adjustment**	
Q771	B-5	T703	B-2
Transistor & Resistor		T704	B-3
QR702	C-2	T711	C-1
QR703	C-2	VR701	B-4
QR704	C-2	VR702	B-4
QR711	B-5	VR741	B-3
QR712	A-4	VR751	B-1
QR714	A-1	**Connector**	
Integrated Circuit		PS701	C-7
IC701	B-2	PS702	C-5
Test Point		PS703	C-3
TL703	B-2	PS704	C-1
TL704	C-2		

ADDRESS INFORMATION

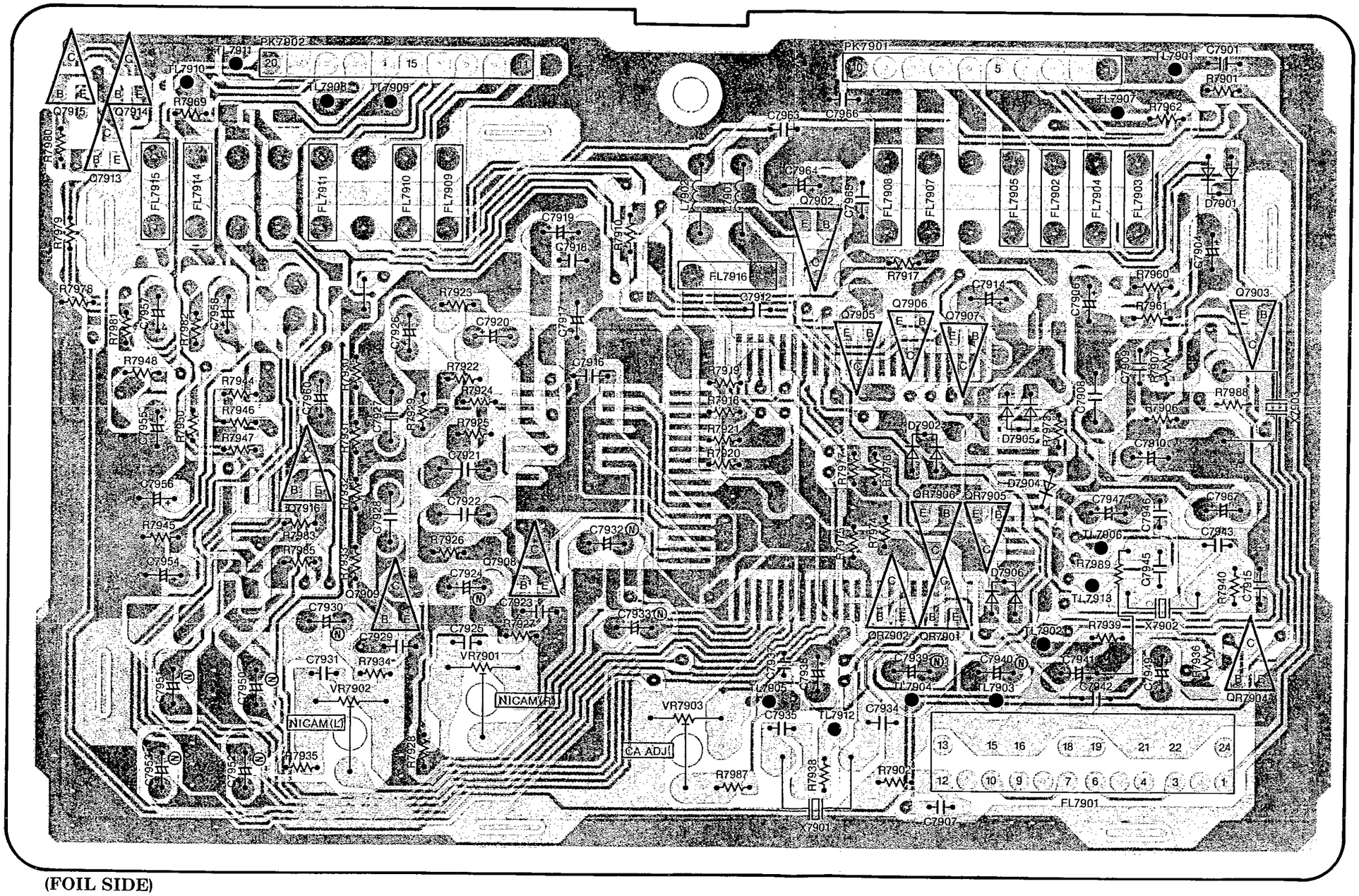


3-25. NICAM DECODER PACK C.B.A. (VEP07675A: NV-HD100B) (VEP07675B: NV-HD100EB)



(COMPONENT SIDE)

3—75 3—76



(FOIL SIDE)

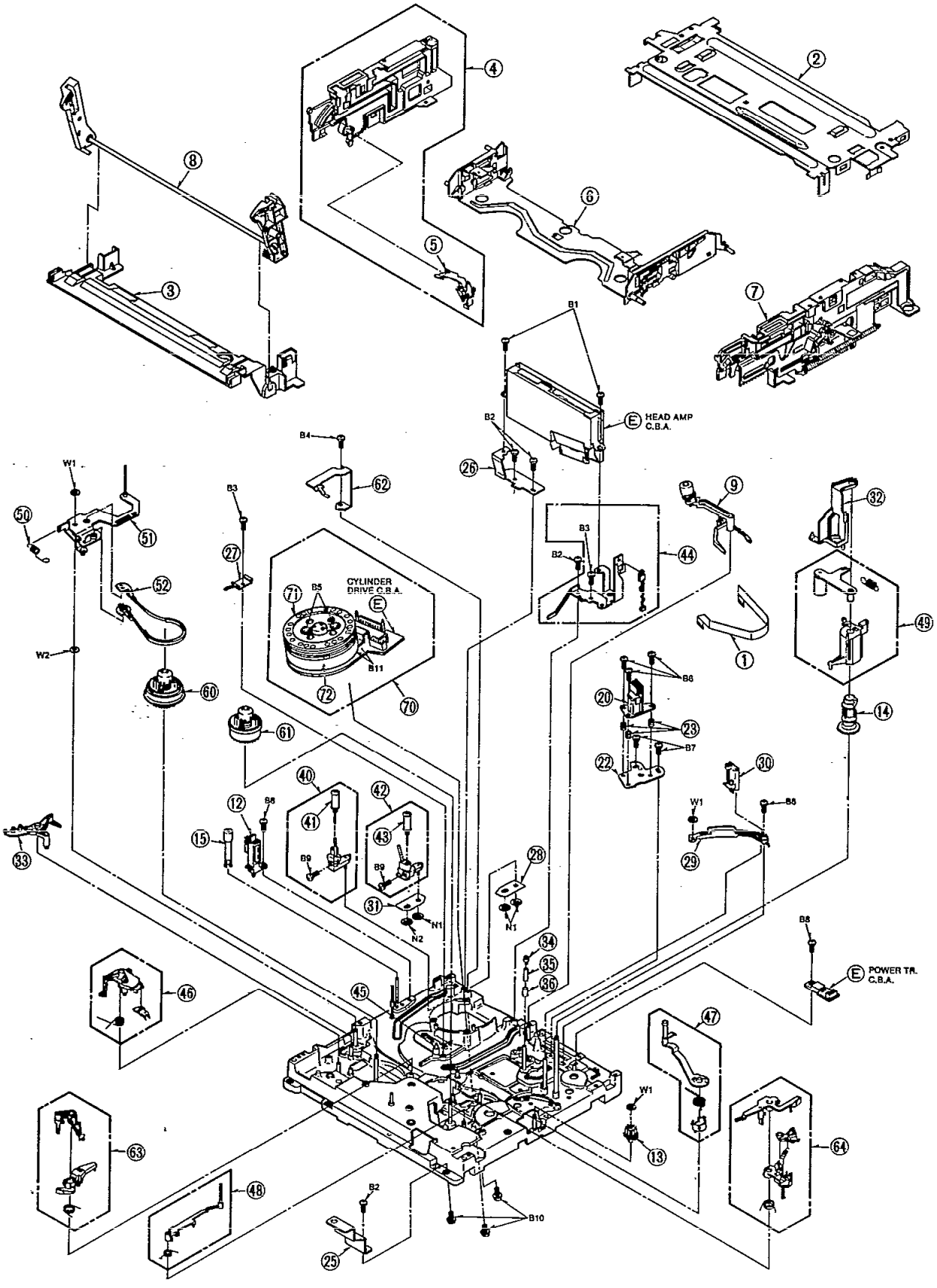
NICAM DECODER PACK C.B.A.	
Transistor	
Q7901	C-1
Q7902	C-9
Q7903	C-10
Q7904	C-1
Q7905	C-9
Q7906	C-9
Q7907	C-9
Q7908	B-8
Q7909	B-7
Q7910	B-4
Q7913	C-6
Q7914	C-6
Q7915	C-6
Q7916	B-7
Transistor & Resistor	
QR7901	B-9
QR7902	B-9
QR7903	A-1
QR7904	A-10
QR7905	B-9
QR7906	B-9
Integrated Circuit	
IC7901	B-2
IC7902	B-3
IC7903	B-5
Test Point	
TL7901	D-10
TL7902	B-10
TL7903	A-9
TL7904	A-9
TL7905	A-9
TL7906	B-10
TL7907	C-10
TL7908	D-7
TL7909	D-7
TL7910	D-6
TL7911	D-7
TL7912	A-9
TL7913	B-10
Adjustment	
VR7901	A-8
VR7902	A-7
VR7903	A-8
Connector	
PK7901	D-2
PK7901	D-9
PK7902	D-4
PK7902	D-7

ADDRESS INFORMATION

SECTION 4
EXPLODED VIEWS & PARTS LIST

4-1. EXPLODED VIEW & MECHANICAL REPLACEMENT PARTS LIST

❶ CHASSIS PARTS SECTION (1)



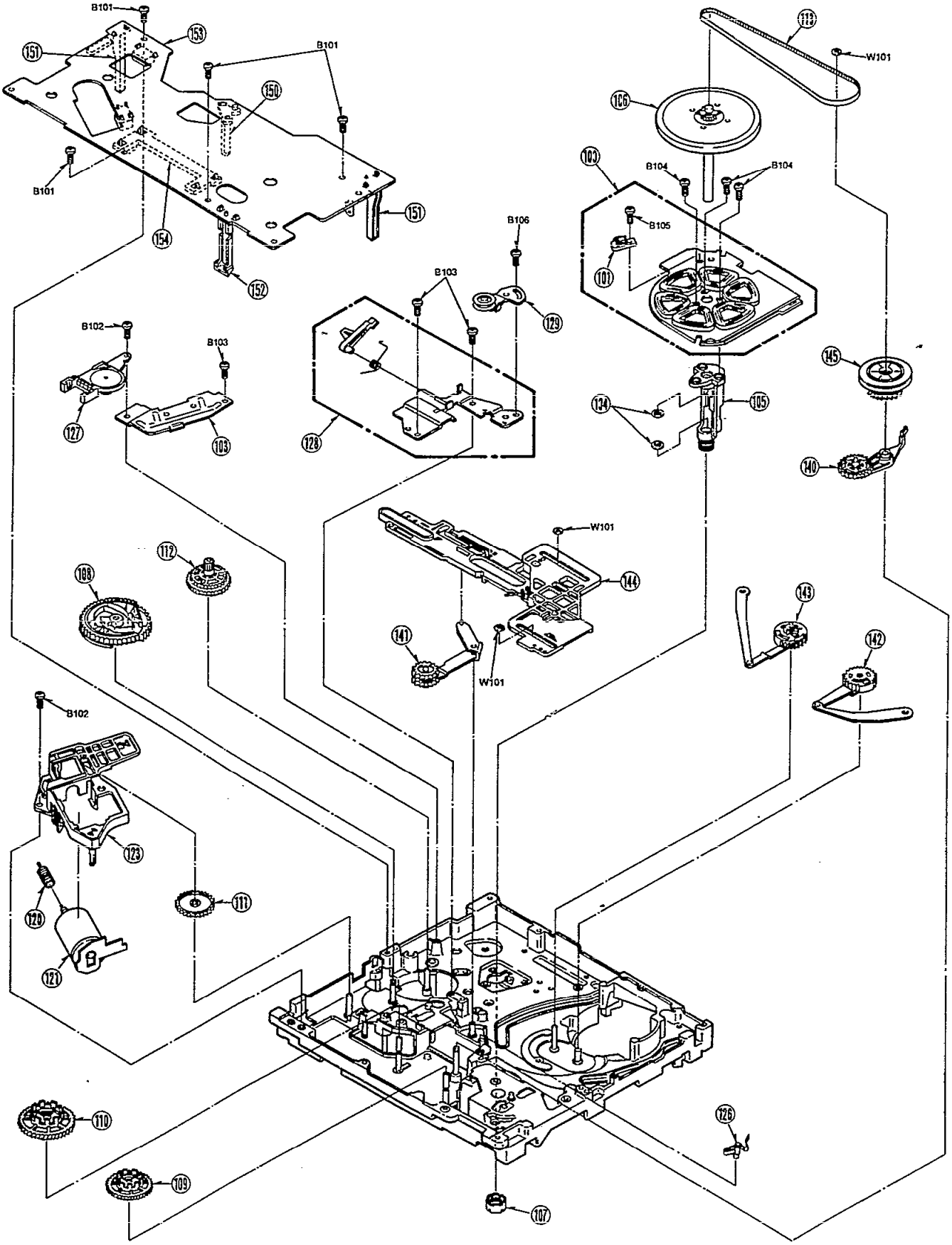
Note:1.* Be sure to make your orders of replacement parts according to this list.
2.IMPORTANT SAFETY NOTICE
Components identified with the mark <!> have the special characteristics for safety. When replacing any of these components,use only the same type.

Ref.No.		Part No.	Part Name & Description	Pcs	Remarks
1(1)		VWJ0653	FLEXIBLE CABLE (6P)	1	P4003-P1501
2(1)		VMA8644	TOP PLATE	1	
3(1)		VMA8787	CASSETTE GUIDE	1	
4(1)		VXA4660	SIDE PLATE (L) UNIT	1	
5(1)		VXL2250	OPENER LEVER UNIT	1	
6(1)		VXA4661	CASSETTE HOLDER PLATE UNIT	1	
7(1)		VXA4806	SIDE PLATE (R) UNIT	1	
8(1)		VXP1339	MAIN SHAFT UNIT	1	
9(1)		VXL2251	CLEANER ARM UNIT	1	
12(1)		VBS0050	FE HEAD	1	
13(1)		VDG0871	CARRIAGE CONNECTION GEAR	1	
14(1)		VDG0886	PINCH CAM GEAR	1	
15(1)		VXP1402	IMPEDANCE ROLLER UNIT	1	
20(1)		VED0205	A/C HEAD (1) UNIT	1	
22(1)		VMA8624	A/C HEAD BASE	1	
23(1)		VMB2515	A/C HEAD SPRING	3	
25(1)		VMA8761	MOUNT ANGLE	1	
26(1)		VMA8763	HEAD AMP MOUNT ANGLE (L)	1	
27(1)		VMC0917	EARTH SPRING	1	
28(1)		VMA8874	INCLIND BASE HOLDER (S)	1	
29(1)		VMD2078	P5 STOPPER BASE	1	
30(1)		VXA4927	P5 POST STOPPER	1	
31(1)		VMA8873	INCLIND BASE HOLDER (T)	1	
32(1)		VMD2101	OPENER PIECE	1	
33(1)		VML2776	TENSION SPRING ARM	1	
34(1)		VMX1544	P4 UPPER LIMITER	1	
35(1)		VMX2175	P4 SLEEVE	1	
36(1)		VMX2176	P4 LOWER LIMITER	1	
40(1)		VXA4982KIT	INCLINED BASE (S) UNIT	1	
41(1)		VXP1415	ROLLER POST	2	
42(1)		VXA4984KIT	INCLINED BASE (T) UNIT	1	
44(1)		VXA4974	HEAD AMP MOUNT ANGLE (R) U.	1	
45(1)		VMS5383	CASSETTE POSITION FIXTURE	1	
46(1)		VXL2310	REVIEW ARM UNIT	1	
47(1)		VXL2306	P5 ARM UNIT	1	
48(1)		VXL2243	TAKE UP TENSION REGULATOR	1	
			ARM UNIT		
49(1)		VXL2246	PINCH ARM UNIT	1	
50(1)		VMB2434	TENSION SPRING	1	
51(1)		VXL2309	TENSION ARM (1) UNIT	1	
52(1)		VXZ0310	TENSION BAND UNIT	1	
60(1)		VXR0221	SUPPLY REEL TABLE UNIT	1	
61(1)		VXR0222	TAKE UP REEL TABLE UNIT	1	
62(1)		VXS0113	EARTH PLATE	1	
63(1)		VXZ0312	SUPPLY BRAKE ARM UNIT	1	
64(1)		VXZ0313	TAKE UP BRAKE ARM UNIT	1	
70(1)		VEG1027	CYLINDER UNIT	1	
71(1)		VEH0601	UPPER CYLINDER UNIT	1	
72(1)		VSC2188	CYLINDER SHIELD PLATE	1	
B1(1)		VHD0773	SCREW	2	
B2(1)		XTV26+6F	SCREW	4	
B3(1)		XTV26+4F	SCREW	2	
B4(1)		XTN3+6FFZ	SCREW	1	
B5(1)		VHD0553	SCREW	2	
B6(1)		VHD0762	SCREW	3	
B7(1)		XTV26+6FZ	SCREW	2	
B8(1)		XTV26+8F	SCREW	3	
B9(1)		VHD0760	SCREW	2	
B10(1)		VHD0342	SCREW	3	
B11(1)		XYNV0029	SCREW	2	
N1(1)		VHN0192	NUT	3	
N2(1)		VHN0193	NUT	1	
W1(1)		VMX2208	WASHER	3	
W2(1)		XWGV26D5G	WASHER	1	

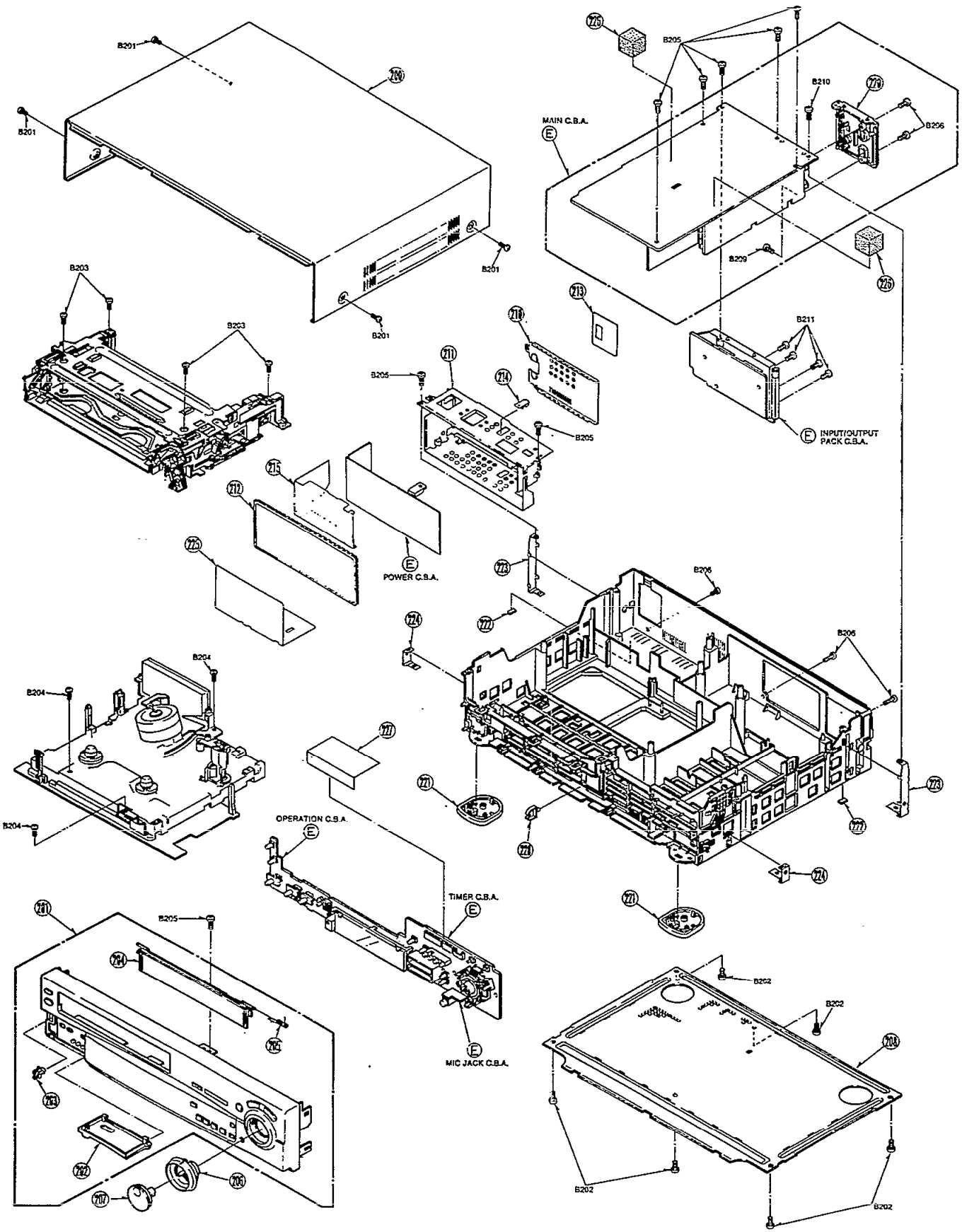
Note:1.* Be sure to make your orders of replacement parts according to this list.
2.IMPORTANT SAFETY NOTICE
Components identified with the mark <!> have the special characteristics for safety. When replacing any of these components,use only the same type.

Ref.No.		Part No.	Part Name & Description	Pcs	Remarks
100(2)		VEK5927	STATOR UNIT	1	
101(2)		VBK0061	FG HEAD	1	
103(2)		VMA8765	ROTOR STOPPER	1	
104(2)		VMX1927	OIL SEAL	2	
105(2)		VXD0140	HOUSING UNIT	1	
106(2)		VXP1350	ROTOR UNIT	1	
107(2)		VXQ0297	THRUST SCREW UNIT	1	
108(2)		VDG0913	MAIN CAM GEAR	1	
109(2)		VDG0861	SUPPLY REEL GEAR	1	
110(2)		VDG0862	TAKE UP REEL GEAR	1	
111(2)		VDG0868	WORM WHEEL GEAR	1	
112(2)		VDG0885	SUB CAM GEAR	1	
113(2)		VDV0235	TIMING BELT	1	
120(2)		VDG0866	WORM GEAR	1	
121(2)		VEM0427	LOADING MOTOR (1) UNIT	1	
123(2)		VMD1942	MOTOR BRACKET	1	
126(2)		VML2725	IDLER CONTROL LEVER	1	
127(2)		VSS0365	MODE SW	1	
128(2)		VXA4797	SS BRAKE BASE UNIT	1	
129(2)		VXA4799	TENSION ROLLER UNIT	1	
140(2)		VXL2229	IDLER ARM UNIT	1	
141(2)		VXL2230	DIRECT LEVER UNIT	1	
142(2)		VXL2299	SUPPLY LOADING ARM UNIT	1	
143(2)		VXL2300	TAKE UP LOADING ARM UNIT	1	
144(2)		VXL2307	MAIN LEVER UNIT	1	
145(2)		VXP1409	CENTRE CLUTCH	1	
150(2)		VMD1926	LED HOLDER	1	
151(2)		VMD1927	PHOTO TRANSISTOR HOLDER	2	
152(2)		VES0695	SAFETY TAB SW	1	
153(2)		VJB00S63	MECHANISM CONNECTION C.B.	1	ELECTRICAL PARTS ON
					THE C.B.A. IS LISTED
					ON ELECTRICAL PARTS
					LIST.
154(2)		VMD2029	REEL SHAFT GUIDE	1	
B101(2)		VHD0772	SCREW	4	
B102(2)		XTV26+8F	SCREW	2	
B103(2)		XTV26+6F	SCREW	3	
B104(2)		VHD0753	SCREW	3	
B105(2)		VHD0754	SCREW	1	
B106(2)		XSB26+4FZ	SCREW	1	
W101(2)		VMX2208	WASHER	3	

❷ CHASSIS PARTS SECTION (2)



❸ CASING PARTS SECTION



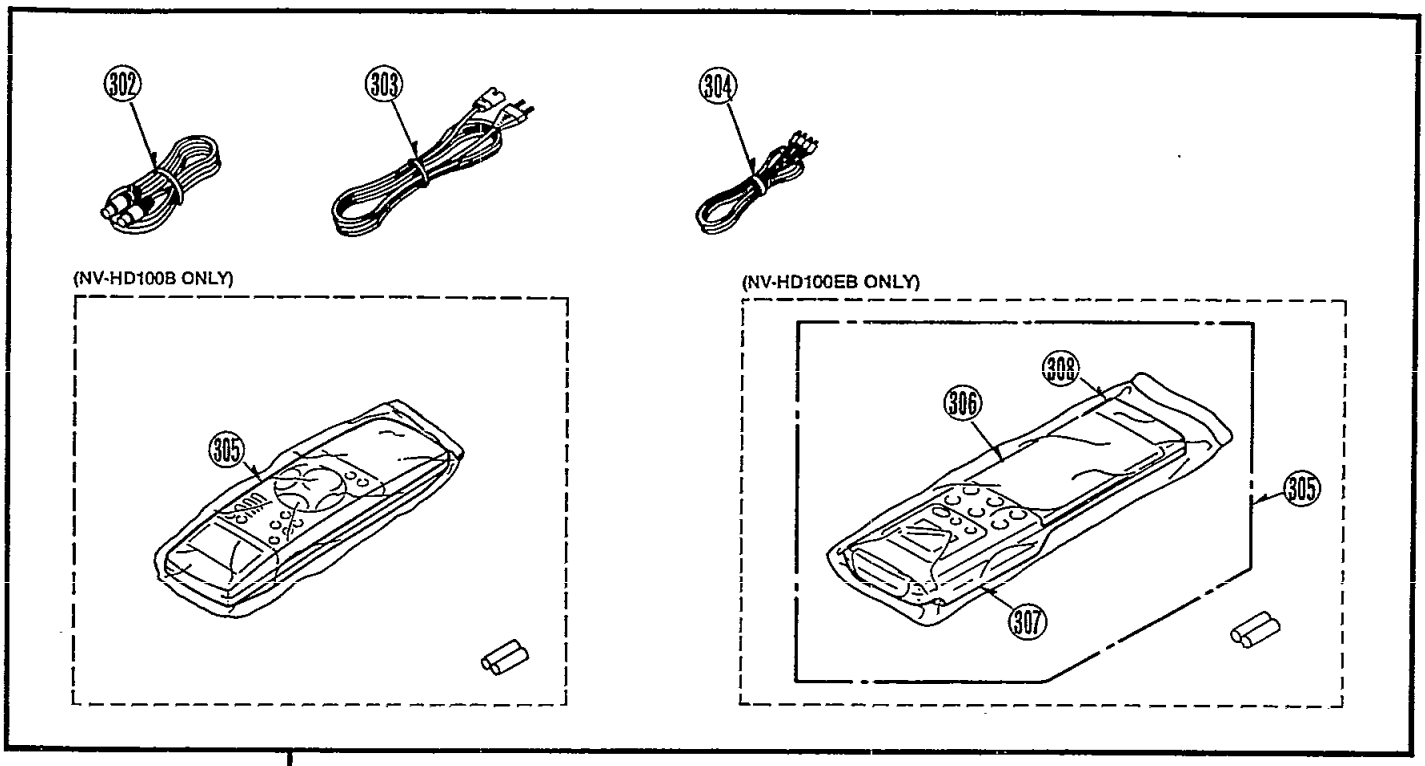
Note:1.* Be sure to make your orders of replacement parts according to this list.
2.IMPORTANT SAFETY NOTICE
Components identified with the mark <!> have the special characteristics for safety. When replacing any of these components,use only the same type.

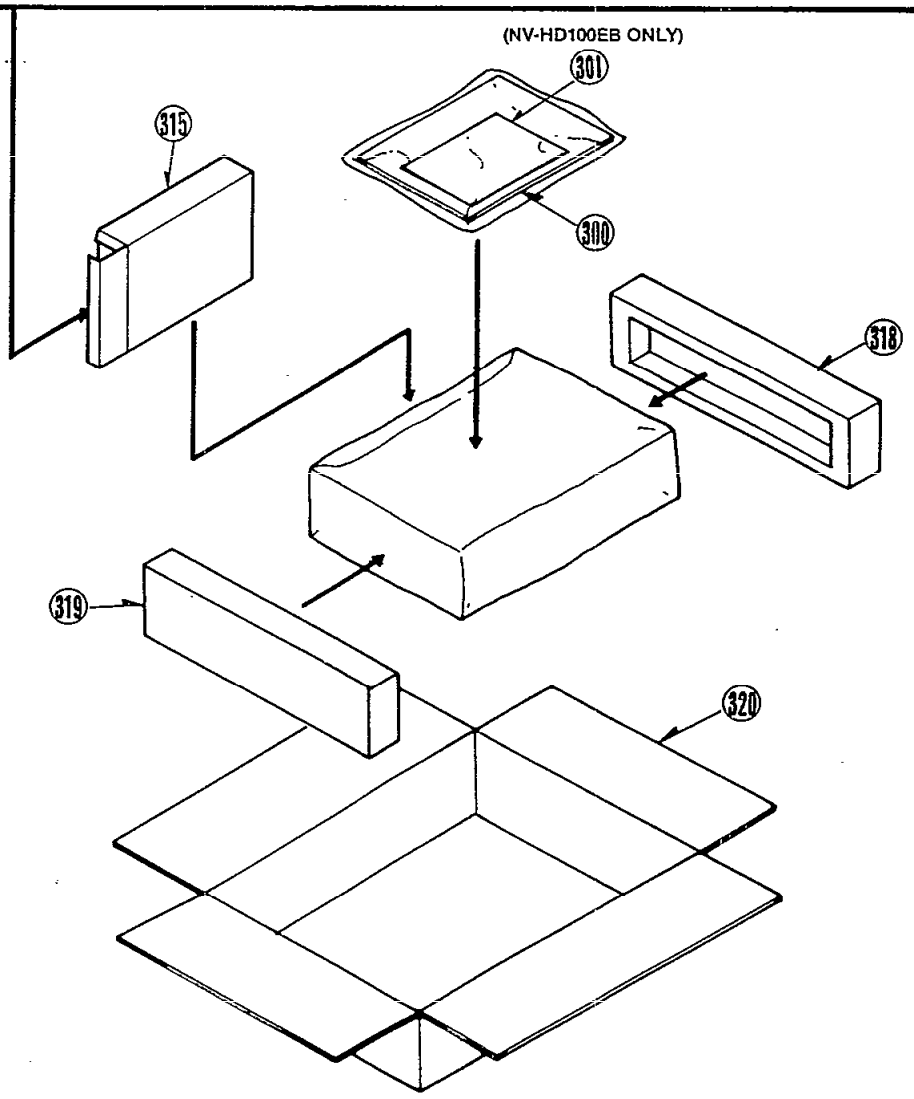
Ref.No.		Part No.	Part Name & Description	Pcs	Remarks
200(3)		VGM0980	TOP PANEL	1	
201(3)		VYP5211	FRONT PANEL UNIT	1	NV-HD100B
					SUPPLIED FROM M.B.V.
201(3)		VYP5212	FRONT PANEL UNIT	1	NV-HD100EB
202(3)		VYF1965	DOOR PANEL UNIT	1	NV-HD100B
					SUPPLIED FROM M.B.V.
202(3)		VYF1950	DOOR PANEL UNIT	1	NV-HD100EB
203(3)		VGQ0550	DOOR LOCK PIECE	1	
204(3)		VKF1978	BLINDER PANEL	1	
205(3)		VMB2521	BLINDER SPRING	1	
206(3)		VGU6124	SHUTTLE KNOB	1	
207(3)		VXU1139	JOG KNOB UNIT	1	
208(3)		VKU0374	BOTTOM PLATE	1	
210(3)		VSC3110	POWER SHIELD COVER (TOP)	1	
211(3)		VXA3571	POWER SHIELD COVER (MAIN)	1	
212(3)		VSC2237	POWER SHIELD COVER (BOTTOM)	1	
213(3)		VGH2721	NAME PLATE	1	
214(3)		VMC0357	IC HOLDER SPRING	1	
215(3)		VMZ1950	POWER BARRIER	1	<!>
220(3)		VJH0684	RF ANT TERMINAL PLATE	1	NV-HD100B
					SUPPLIED FROM M.B.V.
220(3)		VJH0683	RF ANT TERMINAL PLATE	1	NV-HD100EB
221(3)		VKA0154	LEG	2	
222(3)		VKA0122	FOOT	2	
223(3)		VMP3820	SIDE ANGLE (REAR)	2	
224(3)		VMP3821	SIDE ANGLE (FRONT)	2	
225(3)		VMZ1621	SHIELD BARRIER	1	
226(3)		VMT0506	MAIN C.B.A. SPACER	2	
227(3)		VMZ2146	TIMER BARREIR	1	
228(3)		VJP0442	WIRE SADDLE	1	
B201(3)		XTW3+10TFZ	SCREW	4	
B202(3)		VHD0059	SCREW	6	
B203(3)		XTV26+8FR	SCREW	4	
B204(3)		VHD0168	SCREW	3	
B205(3)		VHD0773	SCREW	7	
B206(3)		XTV3+12JFZ	SCREW	5	
B209(3)		XTV3+6F	SCREW	1	
B210(3)		XTV3+8J	SCREW	1	
B211(3)		XTV3+8GFZ	SCREW	4	NV-HD100B
B211(3)		XTV3+8GFZ	SCREW	2	NV-HD100EB

Note:1.* Be sure to make your orders of replacement parts according to this list.
2.IMPORTANT SAFETY NOTICE
Components identified with the mark <!> have the special characteristics for safety. When replacing any of these components,use only the same type.

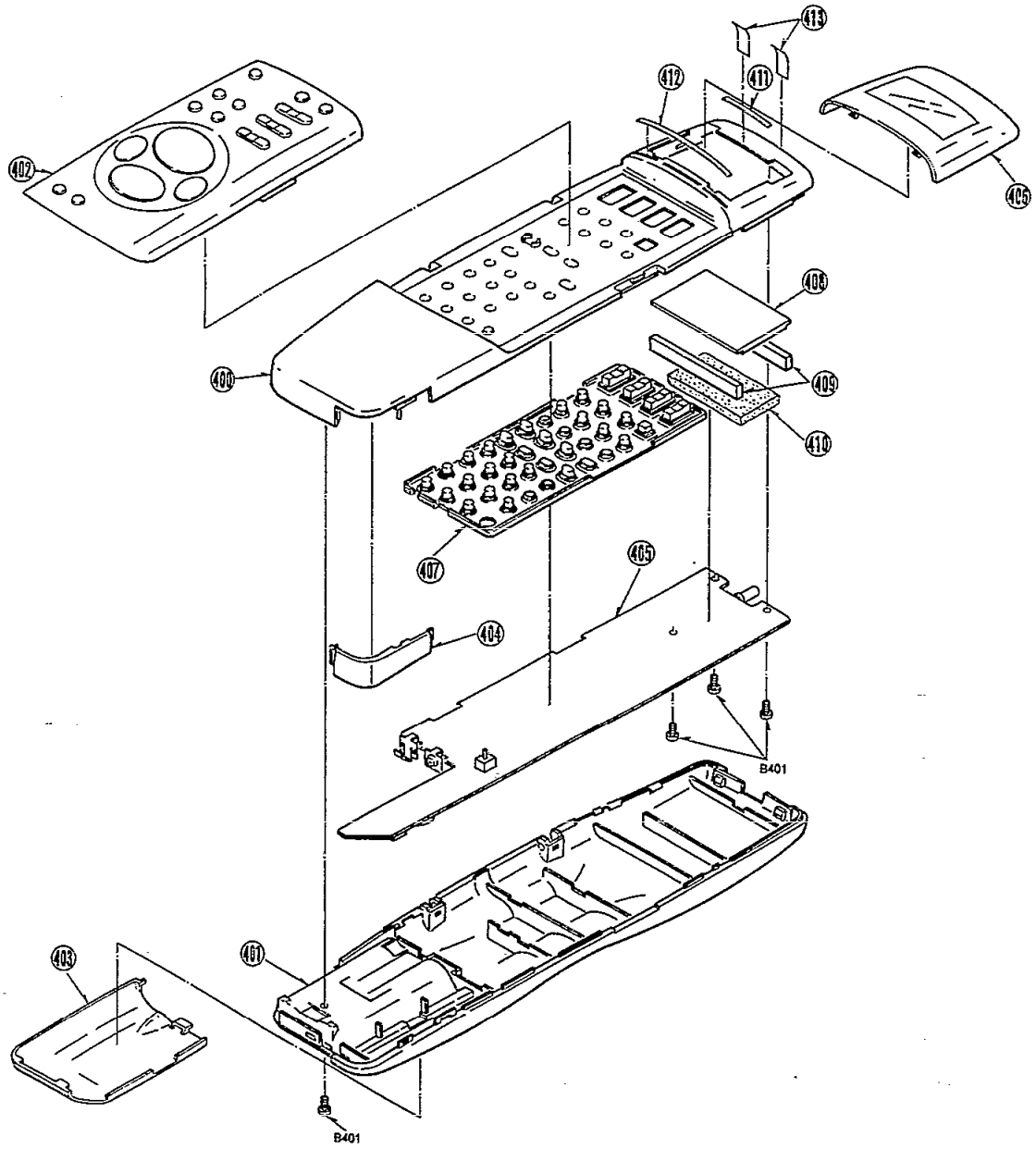
Ref.No.		Part No.	Part Name & Description	Pcs	Remarks
300(4)		VQT5171	OPERATING INSTRUCTIONS	1	<!>NV-HD100B
			(ENGLISH)		SUPPLIED FROM M.B.V.
300(4)		VQT5170	OPERATING INSTRUCTIONS	1	<!>NV-HD100EB
			(FINNISH/PORTUGUESE)		
300(4)		VQT5172	OPERATING INSTRUCTIONS	1	<!>NV-HD100EB
			(SWEDISH/DANISH)		
301(4)		VQC2119	PROGRAMME SHEET	1	NV-HD100EB
302(4)		VJA0376	DIN RF CABLE	1	
303(4)		VJA0733	AC CORD	1	<!>NV-HD100B
303(4)		VJA0664	AC CORD	1	<!>NV-HD100EB
304(4)		VJA0231	AUDIO CABLE	1	
305(4)		VEQ1484	REMOTE CONTROLLER	1	NV-HD100B
					SUPPLIED FROM M.B.V.
305(4)		VEQ1482	REMOTE CONTROLLER	1	NV-HD100EB
306(4)		VGP3344	DOOR PANEL	1	NV-HD100EB
307(4)		VKF1977	BATTERY COVER	1	NV-HD100EB
308(4)		VGQ3046	CAP	1	NV-HD100EB
315(4)		VPK0834	ACCESSORIES PACKING	1	
318(4)		VPN3624	CUSHION (R)	1	NV-HD100B
					SUPPLIED FROM M.B.V.
318(4)		VPN3555	CUSHION (R)	1	NV-HD100EB
319(4)		VPN3630	CUSHION (L)	1	NV-HD100B
					SUPPLIED FROM M.B.V.
319(4)		VPN3556	CUSHION (L)	1	NV-HD100EB
320(4)		VPG7076	PACKING	1	NV-HD100B
					SUPPLIED FROM M.B.V.
320(4)		VPG6764	PACKING	1	NV-HD100EB

❹ PACKING PARTS SECTION





❺ REMOTE CONTROLLER UNIT (NV-HD100B)



Note:1.* Be sure to make your orders of replacement parts according to this list.
2.IMPORTANT SAFETY NOTICE
Components identified with the mark (!) have the special characteristics for safety. When replacing any of these components,use only the same type.

Ref.No.		Part No.	Part Name & Description	Pcs	Remarks
400(5)		VYK5056	TOP COVER UNIT	1	NV-HD100B
					SUPPLIED FROM M.B.V.
401(5)		VYK4517	BOTTOM COVER UNIT	1	NV-HD100B
402(5)		VYK4842	DOOR PANEL UNIT	1	NV-HD100B
					SUPPLIED FROM M.B.V.
403(5)		VYK4844	BATTERY COVER UNIT	1	NV-HD100B
					SUPPLIED FROM M.B.V.
404(5)		VGQ3040	CAP	1	NV-HD100B
405(5)			REMOTE CONTROLLER C.B.A.	1	The C.B.A. is not
					supplied as spare
					part.
406(5)		VKW1668	IR WINDOW	1	NV-HD100B
407(5)		VSP0734	RUBBER CONTACT	1	NV-HD100B
					SUPPLIED FROM M.B.V.
408(5)		VSL0287	LCD	1	NV-HD100B
					SUPPLIED FROM M.B.V.
409(5)		VSQ0809	CONDUCTIVE RUBBER	2	NV-HD100B

Ref.No.		Part No.	Part Name & Description	Pcs	Remarks
410(5)		VGQ3027	LCD SPACER	1	NV-HD100B
411(5)		VGQ3028	AGGLUTINATED TAPE (A)	1	NV-HD100B
412(5)		VGQ3029	AGGLUTINATED TAPE (B)	1	NV-HD100B
413(5)		VGQ3077	AGGLUTINATED FILM	2	NV-HD100B
B401(5)		XTB2+6GFZ	SCREW	4	NV-HD100B
			SERVICE FIXTURES & TOOLS		
		VFJ812SH3P	VHS ALIGNMENT TAPE(PAL)	1	
		VFK0335	RETAINING RING REMOVER	1	
			(3mm/4mm)		
		VFK0329	POST ADJUSTMENT SCREWDRIVER	1	
		VFK0326	HEX WRENCH SET	1	
		VFK0132	BACK TENSION METER	1	
		VFK0343	CHECK LIGHT	1	
		VFKC27	HEAD CLEANING STICK	1	
		MDR265	MORLYTONE GREASE	1	
		VFK0341	UPPER CYLINDER REMOVER	1	
		VFK0680	WHITE GREASE	1	
		VFK0851	CENTRE FIXING TOOL	1	
		VFK0330	FINE ADJUSTMENT GEAR DRIVER	1	

4-2. ELECTRICAL REPLACEMENT PARTS LIST

Note:1.Be sure to make your orders of replacement parts according to this list.
2.IMPORTANT SAFETY NOTICE : Components identified with the mark <!> have the special characteristics for safety. When replacing any of these components use only the same type.
3.Unless otherwise specified,
All resistors are in OHMS , K-1,000 OHMS. All capacitors are in MICRO-FARADS(uf),P-uuF.
4.The P.C.Board units marked width'■'show below the main assembled parts.
5.The marking(RTL) indicates the retention time is limited for this item. After the discontinuation of this assembly in production, it will no longer be available.

Ref.No.		Part No.	Part Name & Description	Pcs	Remarks
		VEP03977H	MAIN C.B.A.	1	(RTL)NV-HD100B
			(Page:4-8)		SUPPLIED FROM M.B.V.
					INCLUDING THE TV
					DEMODULATOR PACK
					C.B.A.(VEP07680F),
					LUMINANCE &
					CHROMINANCE PACK
					C.B.A.(VEP03975H),
					Hi-Fi AUDIO PACK
					C.B.A.(VEP04361R),
					NICAM DECODER PACK
					C.B.A.(VEP07675A).
		VEP07680F	TV DEMODULATOR PACK C.B.A.	1	(RTL)NV-HD100B
					INCLUDED IN MAIN
					C.B.A.(VEP03977H).
		VEP03975H	LUMINANCE & CHROMINANCE	1	(RTL)NV-HD100B
			PACK C.B.A.		INCLUDED IN MAIN
					C.B.A.(VEP03977H).
		VEP04361R	Hi-Fi AUDIO PACK C.B.A.	1	(RTL)
					INCLUDED IN MAIN
					C.B.A.(VEP03977H).
		VEP07675A	NICAM DECODER C.B.A.	1	(RTL)NV-HD100B
					INCLUDED IN MAIN
					C.B.A.(VEP03977H).
		VEP03977J	MAIN C.B.A.	1	(RTL)NV-HD100EB
			(Page:4-15)		INCLUDING THE TV
					DEMODULATOR PACK
					C.B.A.(VEP07684D),
					LUMINANCE &
					CHROMINANCE PACK
					C.B.A.(VEP03975J),
					Hi-Fi AUDIO PACK
					C.B.A.(VEP04361R),
					NICAM DECODER PACK
					C.B.A.(VEP07675B).
		VEP07684D	TV DEMODULATOR PACK C.B.A.	1	(RTL)NV-HD100EB
					INCLUDED IN MAIN
					C.B.A.(VEP03977J).
		VEP03975J	LUMINANCE & CHROMINANCE	1	(RTL)NV-HD100EB
			PACK C.B.A.		INCLUDED IN MAIN
					C.B.A.(VEP03977J).
		VEP04361R	Hi-Fi AUDIO PACK C.B.A.	1	(RTL)
					INCLUDED IN MAIN
					C.B.A.(VEP03977J).
		VEP07675B	NICAM DECODER PACK C.B.A.	1	(RTL)NV-HD100EB
					INCLUDED IN MAIN
					C.B.A.(VEP03977J).
		VEP03985A	INPUT/OUTPUT PACK C.B.A.	1	(RTL)NV-HD100B
			(Page:4-22)		SUPPLIED FROM M.B.V.
		VEP03979B	INPUT/OUTPUT PACK C.B.A.	1	(RTL)NV-HD100EB
			(Page:4-23)		
		VEX0126	CYLINDER DRIVE C.B.A.	1	(RTL)

Ref.No.		Part No.	Part Name & Description	Pcs	Remarks
			(Page:4-24)		
		VEP01487H	POEWR C.B.A.	1	(RTL)NV-HD100B
			(Page:4-24)		
		VEP01487K	POEWR C.B.A.	1	(RTL)NV-HD100EB
			(Page:4-25)		
		VEP05176C	HEAD AMP C.B.A.	1	(RTL)
			(Page:4-25)		
		VEP07703E	TIMER C.B.A.	1	(RTL)NV-HD100B
			(Page:4-26)		SUPPLIED FROM M.B.V.
					INCLUDING THE MIC
					C.B.A.(VEP00S82A).
		VEP07703F	TIMER C.B.A.	1	(RTL)NV-HD100EB
			(Page:4-27)		INCLUDING THE MIC
					C.B.A.(VEP00S82A).
		VEP00S82A	MIC C.B.A.	1	(RTL)
					INCLUDED IN TIMER
					C.B.A.(VEP07703E,F).
		VEP06852G	OPERATION C.B.A.	1	(RTL)NV-HD100B
			(Page:4-28)		
		VEP06852P	OPERATION C.B.A.	1	(RTL)NV-HD100EB
			(Page:4-29)		
		--------	MECHANISM CONNECTION C.B.A.	1	(RTL)
			(Page:4-29)		NOT SUPPLIED AS
					C.B.A. (C.B. IS
					LISTED ON MECHANICAL
					PARTS LIST)
		VEP00T02A	FE HEAD C.B.A.	1	(RTL)
			(Page 4-29)		
		--------	MOTOR C.B.A.	1	(RTL)
			(Page 4-29)		C.B.A. IS INCLUDED
					IN LOADING MOTOR (1)
					UNIT(VEM0427)
		VEP00S86A	POWER TRANSISTOR C.B.A.	1	(RTL)
			(Page 4-30)		
		ENC17990	RF CONVERTER	1	<!>NV-HD100B
		ENC17984	RF CONVERTER	1	<!>NV-HD100EB
		ENV87837H3R	TUNER	1	<!>NV-HD100B
		ENV578B5H6	TUNER	1	<!>NV-HD100EB
F1101		VSF0107C16	FUSE	1	<!>
	‖	VEP03977H	MAIN C.B.A.		(RTL)NV-HD100B
					SUPPLIED FROM M.B.V.
			CAPACITORS		
C305		ECUM1H470JCN	C.CAPACITOR CH 50V 47P	1	
C306,07		ECUM1H1042FN	C.CAPACITOR CH 50V 0.1U	2	
C308		ECEA1EKN4R7	E.CAPACITOR 25V 4.7U	1	

Ref.No.		Part No.	Part Name & Description	Pcs	Remarks
C309		ECUM1H333KBN	C.CAPACITOR CH 50V 0.033U	1	
C310		ECEA1CK220	E.CAPACITOR 16V 22U	1	
C311		ECEA0JK101	E.CAPACITOR 6.3V 100U	1	
C312		ECUM1H104ZFN	C.CAPACITOR CH 50V 0.1U	1	
C313,14		ECUM1H103ZFN	C.CAPACITOR CH 50V 0.01U	2	
C315		ECUM1H560JCN	C.CAPACITOR CH 50V 56P	1	
C319		ECEA0JK101	E.CAPACITOR 6.3V 100U	1	
C320		ECUM1H820JCN	C.CAPACITOR CH 50V 82P	1	
C701		ECEA1CK100	E.CAPACITOR 16V 10U	1	
C702		ECEA1EK4R7	E.CAPACITOR 25V 4.7U	1	
C705		ECUV1H104ZFG	CAPACITOR CH 50V 0.1U	1	
C708		ECEA1CK220	E.CAPACITOR 16V 22U	1	
C710		ECUM1H103ZFN	C.CAPACITOR CH 50V 0.01U	1	
C719,20		ECUM1H104ZFN	C.CAPACITOR CH 50V 0.1U	2	
C721		ECQV1H823JZ	P.CAPACITOR 50V 0.082U	1	
C723		ECEA1CK100	E.CAPACITOR 16V 10U	1	
C725		ECQV1H104JZ	P.CAPACITOR 50V 0.1U	1	
C728		ECUM1H103ZFN	C.CAPACITOR CH 50V 0.01U	1	
C730		ECEA1CK100	E.CAPACITOR 16V 10U	1	
C731		VCEA1CAC100	E.CAPACITOR 16V 10U	1	
C732		ECEA1EK3R3	E.CAPACITOR 25V 3.3U	1	
C735		ECUM1H151JCN	C.CAPACITOR CH 50V 150P	1	
C736,37		ECUM1H103ZFN	C.CAPACITOR CH 50V 0.01U	2	
C739		ECUM1H101JCN	C.CAPACITOR CH 50V 100P	1	
C740		ECUM1H103ZFN	C.CAPACITOR CH 50V 0.01U	1	
C741		ECEA1HK010	E.CAPACITOR 50V 1U	1	
C742		ECEA1CK100	E.CAPACITOR 16V 10U	1	
C743		ECUM1H270JSN	C.CAPACITOR CH 50V 27P	1	
C744,45		ECEA1HK0R1	E.CAPACITOR 50V 0.1U	2	
C746		ECUM1H220JCN	C.CAPACITOR CH 50V 22P	1	
C747		ECUM1H680JPN	C.CAPACITOR CH 50V 68P	1	
C748		ECEA1CK470	E.CAPACITOR 16V 47U	1	
C749		ECEA1CPK100	E.CAPACITOR 16V 10U	1	
C760		ECQV1H563JZ	P.CAPACITOR 50V 0.056U	1	
C761		ECUM1H103ZFN	C.CAPACITOR CH 50V 0.01U	1	
C782		ECUM1H220JCN	C.CAPACITOR CH 50V 22P	1	
C801		ECUM1H103ZFN	C.CAPACITOR CH 50V 0.01U	1	
C802		ECUM1H151JCN	C.CAPACITOR CH 50V 150P	1	
C803,04		ECUM1H103ZFN	C.CAPACITOR CH 50V 0.01U	2	
C805		ECEA0JK221	E.CAPACITOR 6.3V 220U	1	
C806		ECUM1H104ZFN	C.CAPACITOR CH 50V 0.1U	1	
C807		ECUM1H181JCN	C.CAPACITOR CH 50V 180P	1	
C808		ECUM1H270JCN	C.CAPACITOR CH 50V 27P	1	
C809		ECUM1H103ZFN	C.CAPACITOR CH 50V 0.01U	1	
C812		ECUM1H103ZFN	C.CAPACITOR CH 50V 0.01U	1	
C814		ECUM1H103ZFN	C.CAPACITOR CH 50V 0.01U	1	
C815		ECUM1H560JCN	C.CAPACITOR CH 50V 56P	1	
C816		ECUM1H103ZFN	C.CAPACITOR CH 50V 0.01U	1	
C817		ECUM1H560JCN	C.CAPACITOR CH 50V 56P	1	
C818		ECUM1H103ZFN	C.CAPACITOR CH 50V 0.01U	1	
C819		ECUM1H470JCN	C.CAPACITOR CH 50V 47P	1	
C820-25		ECUM1H103ZFN	C.CAPACITOR CH 50V 0.01U	6	
C826		ECEA0JK101	E.CAPACITOR 6.3V 100U	1	
C827		ECUM1H103ZFN	C.CAPACITOR CH 50V 0.01U	1	
C828		ECUM1H470JCN	C.CAPACITOR CH 50V 47P	1	
C829		ECUM1H103ZFN	C.CAPACITOR CH 50V 0.01U	1	
C830		ECEA1HK0R1	E.CAPACITOR 50V 0.1U	1	
C831		ECQB1H332JH	P.CAPACITOR 50V 0.27U	1	
C832		ECUM1H331JCN	C.CAPACITOR CH 50V 330P	1	
C838		ECUM1H104ZFN	C.CAPACITOR CH 50V 0.1U	1	
C839		ECUM1H100DCN	C.CAPACITOR CH 50V 10P	1	
C841		ECUM1H102KBN	C.CAPACITOR CH 50V 1000P	1	
C842		ECEA0JK101	E.CAPACITOR 6.3V 100U	1	
C843		ECUM1H104ZFN	C.CAPACITOR CH 50V 0.1U	1	
C845		ECEA1HK010	E.CAPACITOR 50V 1U	1	
C846		ECUM1H103ZFN	C.CAPACITOR CH 50V 0.01U	1	
C849		ECUM1H103ZFN	C.CAPACITOR CH 50V 0.01U	1	
C1001		ECA1EM101	E.CAPACITOR 25V 100U	1	
C1002		ECEA1CK330	E.CAPACITOR 16V 33U	1	
C1003		ECEA0JK330	E.CAPACITOR 6.3V 33U	1	
C1004		ECA0JM471	E.CPAACITOR 6.3V 470U	1	
C1005		ECEA1APZ221	E.CAPACITOR 10V 220U	1	
C2001-03		ECUM1H104ZFN	C.CAPACITOR CH 50V 0.1U	3	
C2004-06		ECEA1CK470	E.CAPACITOR 16V 47U	3	
C2007		ECEA1HK010	E.CAPACITOR 50V 1U	1	

Ref.No.		Part No.	Part Name & Description	Pcs	Remarks
C2006		ECA0JM221	E.CAPACITOR 6.3V 220U	1	
C2009		ECEA1HKG22	E.CAPACITOR 50V 0.22U	1	
C2010,11		ECUM1H333KBN	C.CAPACITOR 50V 0.033U	2	
C2012		ECUM1H103ZFN	C.CAPACITOR CH 50V 0.01U	1	
C2013		ECQV1H683JZ	P.CAPACITOR 50V 0.068U	1	
C2014		ECA1CM101	E.CAPACITOR 16V 100U	1	
C2015-18		ECUM1H333KBN	C.CAPACITOR 50V 0.033U	4	
C2019-21		ECEA1HKZR2	E.CAPACITOR 50V 2.2U	3	
C2027		ECUM1H222KBN	C.CAPACITOR CH 50V 2200P	1	
C2028		ECEA1CKA100	E.CAPACITOR 16V 10U	1	
C2029		ECEA1HK3R3	E.CAPACITOR 50V 3.3U	1	
C2030		ECEA1HKN3R3	E.CAPACITOR 50V 3.3U	1	
C2031		ECUM1H471JCN	C.CAPACITOR 50V 470P	1	
C2032		ECEA1CKA100	E.CAPACITOR 16V 10U	1	
C2033		ECEA1HK3R3	E.CAPACITOR 50V 3.3U	1	
C2034		ECEA0JK220	E.CAPACITOR 6.3V 22U	1	
C2035		ECUM1H103ZFN	C.CAPACITOR CH 50V 0.01U	1	
C2036		ECUM1H222KBN	C.CAPACITOR CH 50V 2200P	1	
C2037		ECA0JM221	E.CAPACITOR 6.3V 220U	1	
C2038		ECQV1H334JZ	P.CAPACITOR 50V 0.33U	1	
C2039		ECEA1HKNR47	E.CAPACITOR 50V 0.47U	1	
C2040		ECUM1H680JCN	C.CAPACITOR CH 50V 68P	1	
C2041,42		ECUM1C105ZFN	C.CAPACITOR 16V 1U	2	
C2043		ECUM1H392KBN	C.CAPACITOR CH 50V 3900P	1	
C2044		ECUM1H223KBN	C.CAPACITOR CH 50V 0.022U	1	
C2045		ECUM1H104ZFN	C.CAPACITOR CH 50V 0.1U	1	
C2046		ECUM1H680JCN	C.CAPACITOR CH 50V 68P	1	
C2047		ECEA1HKNR47	E.CAPACITOR 50V 0.47U	1	
C2048		ECA0JM221	E.CAPACITOR 6.3V 220U	1	
C2049		ECEA1HK4R7	E.CAPACITOR 50V 4.7U	1	
C2050		ECUM1H101JCN	C.CAPACITOR CH 50V 100P	1	
C2051		ECQV1H683JZ	P.CAPACITOR 50V 0.068U	1	
C2052		ECEA1HKR47	E.CAPACITOR 50V 0.47U	1	
C2053		ECEA1CK470	E.CAPACITOR 16V 47U	1	
C2055		ECEA0JK470	E.CAPACITOR 6.3V 47U	1	
C2056		ECUM1H104ZFN	C.CAPACITOR CH 50V 0.1U	1	
C3002,03		ECUM1H102KBN	C.CAPACITOR CH 50V 1000P	2	
C3004		ECEA0JK470	E.CAPACITOR 6.3V 47U	1	
C3008		ECUM1H103ZFN	C.CAPACITOR CH 50V 0.01U	1	
C3009		ECUM1C105ZFN	C.CAPACITOR 16V 1U	1	
C3011		ECUM1H104ZFN	C.CAPACITOR CH 50V 0.1U	1	
C3012		ECUM1H103ZFN	C.CAPACITOR CH 50V 0.01U	1	
C3013		ECEA0JK221	E.CAPACITOR 6.3V 220U	1	
C3014		ECUM1H560JCN	C.CAPACITOR CH 50V 56P	1	
C3015		ECUM1H080DCN	C.CAPACITOR CH 50V 8P	1	
C3016		ECUM1H180JCN	C.CAPACITOR CH 50V 18P	1	
C3018		ECUM1H181JCN	C.CAPACITOR CH 50V 180P	1	
C3020		ECUM1H151JCN	C.CAPACITOR CH 50V 150P	1	
C3021		ECUM1H220JCN	C.CAPACITOR CH 50V 22P	1	
C3023		ECUM1H330JCN	C.CAPACITOR CH 50V 33P	1	
C3024		ECUM1H681JCN	C.CAPACITOR CH 50V 680P	1	
C3027		ECUM1H220JCN	C.CAPACITOR CH 50V 22P	1	
C3028		ECUM1H680JCN	C.CAPACITOR CH 50V 68P	1	
C3030		ECUM1H181JCN	C.CAPACITOR CH 50V 180P	1	
C3031		ECUM1H103ZFN	C.CAPACITOR CH 50V 0.01U	1	
C3032		ECUM1H220JCN	C.CAPACITOR CH 50V 22P	1	
C3033		ECUM1H103ZFN	C.CAPACITOR CH 50V 0.01U	1	
C3034		ECEA1CKA100	E.CAPACITOR 16V 10U	1	
C3035		ECEA0JK470	E.CAPACITOR 6.3V 47U	1	
C3038		ECEA1CK470	E.CAPACITOR 16V 47U	1	
C3040		ECUM1H103ZFN	C.CAPACITOR CH 50V 0.01U	1	
C3043		ECUM1H104ZFN	C.CAPACITOR CH 50V 0.1U	1	
C3047		ECUM1H104ZFN	C.CAPACITOR CH 50V 0.1U	1	
C3048		ECUM1H103KBN	C.CAPACITOR CH 50V 0.01U	1	
C4001		ECA0JM471	E.CPAACITOR 6.3V 470U	1	
C4002,03		ECUM1H104ZFN	C.CAPACITOR CH 50V 0.1U	2	
C4004		ECEA1CPZ101	E.CAPACITOR 16V 100U	1	
C4005		ECUM1C224ZFN	C.CAPACITOR CH 16V 0.22U	1	
C4006		ECEA1CK100	E.CAPACITOR 16V 10U	1	
C4007		ECEA1CPZ101	E.CAPACITOR 16V 100U	1	
C4008		ECUM1C224ZFN	C.CAPACITOR CH 16V 0.22U	1	
C4009		ECEA1CK100	E.CAPACITOR 16V 10U	1	
C4010		ECEA1CK470	E.CAPACITOR 16V 47U	1	
C4011		ECUM1H103ZFN	C.CAPACITOR CH 50V 0.01U	1	
C4012		ECQB1H103K2	P.CAPACITOR 50V 0.01U	1	

Ref.No.	Part No.	Part Name & Description	Pcs	Remarks
C4013	ECQP1222JZ	P.CAPACITOR 0.0022U	1	
C4014	ECKD2H331KB	C.CAPACITOR 500V 330P	1	
C4015	ECQB1H102KZ	P.CAPACITOR 50V 1000P	1	
C4016	ECEA16M33	E.CAPACITOR 16V 33U	1	
C4020	ECUM1H221JCN	C.CAPACITOR CH 50V 220P	1	
C4021	ECUM1H683ZFN	C.CAPACITOR CH 50V 0.068U	1	
C4022	ECUM1H103ZFN	C.CAPACITOR CH 50V 0.01U	1	
C4023	ECUM1H471JCN	C.CAPACITOR 50V 470P	1	
C4025	ECEA1HK010	E.CAPACITOR 50V 1U	1	
C4026	ECUM1H680JCN	C.CAPACITOR CH 50V 68P	1	
C4027	ECEA0JK220	E.CAPACITOR 6.3V 22U	1	
C4502	ECUM1C104ZFN	C.CAPACITOR CH 16V 0.1U	1	
C4503	ECUX1H152KBV	C.CAPACITOR CH 50V 1500P	1	
C4504,05	ECEA1CP2470	E.CAPACITOR 16V 47U	2	
C4506	VCEA1CAH100	E.CAPACITOR 16V 10U	1	
C4507	ECQB1H223JA	P.CAPACITOR 50V 0.022U	1	
C4508	ECEA1EB24R7	E.CAPACITOR 25V 4.7U	1	
C4509	ECEA1AP2470	E.CAPACITOR 10V 47U	1	
C4510	ECQB1H103JA	P.CAPACITOR 50V 0.01U	1	
C4511	ECQB1H332JA	P.CAPACITOR 50V 3300P	1	
C4512	ECUX1H561JV	C.CAPACITOR CH 50V 560P	1	
C4513	ECUM1H681JN	C.CAPACITOR CH 50V 680P	1	
C4514	ECUM1H561JN	C.CAPACITOR CH 50V 560P	1	
C4515	VCEA1EAH4R7	E.CAPACITOR 25V 4.7U	1	
C4517	ECEA1AP2101	E.CAPACITOR 10V 100U	1	
C4518	ECUM1H1042FN	C.CAPACITOR CH 50V 0.1U	1	
C4521	ECUM1C473KBV	C.CAPACITOR CH 16V 0.047U	1	
C4522	VCEA1HAH3R3	E.CAPACITOR 50V 3.3U	1	
C4528	ECUM1H1042FN	C.CAPACITOR CH 50V 0.1U	1	
C4530	ECEA0JPK470	E.CAPACITOR 6.3V 47U	1	
C4533	ECEA1CP2330	E.CAPACITOR 16V 33U	1	
C4537	ECUM1H102JCN	C.CAPACITOR CH 50V 1000P	1	
C4538	ECEA1HUR47 --	E.CAPACITOR 50V 0.47U	1	
C4539	ECUM1C2242FN	C.CAPACITOR CH 16V 0.22U	1	
C4541	ECUM1H1042FN	C.CAPACITOR CH 50V 0.1U	1	
C4545	ECUM1H102KBN	C.CAPACITOR CH 50V 1000P	1	
C4552	ECUM1C1042FN	C.CAPACITOR CH 16V 0.1U	1	
C4556	VCEA1CAH100	E.CAPACITOR 16V 10U	1	
C4557	ECQB1H223JA	P.CAPACITOR 50V 0.022U	1	
C4558	ECEA1EB24R7	E.CAPACITOR 25V 4.7U	1	
C4559	ECEA1AP2470	E.CAPACITOR 10V 47U	1	
C4560	ECQB1H103JA	P.CAPACITOR 50V 0.01U	1	
C4561	ECQB1H332JA	P.CAPACITOR 50V 3300P	1	
C4562	ECUM1H561JN	C.CAPACITOR CH 50V 560P	1	
C4563	ECUM1H681JN	C.CAPACITOR CH 50V 680P	1	
C4564	ECUM1H561JN	C.CAPACITOR CH 50V 560P	1	
C4565	VCEA1EAH4R7	E.CAPACITOR 25V 4.7U	1	
C4567	ECEA1AP2101	E.CAPACITOR 10V 100U	1	
C4568	ECUM1H1042FN	C.CAPACITOR CH 50V 0.1U	1	
C4572	VCEA1HAH3R3	E.CAPACITOR 50V 3.3U	1	
C4576	ECUM1E473KBN	C.CAPACITOR CH 25V 0.047U	1	
C4583	ECEA1CP2330	E.CAPACITOR 16V 33U	1	
C4585,86	ECEA1AP2101	E.CAPACITOR 10V 100U	2	
C4591	ECUM1H1042FN	C.CAPACITOR CH 50V 0.1U	1	
C4592	ECUX1H152KBV	C.CAPACITOR CH 50V 1500P	1	
C4604	ECUM1H182JN	C.CAPACITOR CH 50V 1800P	1	
C4606	VCEA0JAC470	E.CAPACITOR 6.3V 47U	1	
C4611	ECQB1H103JH	P.CAPACITOR 50V 0.01U	1	
C4613	ECUM1H471JCN	C.CAPACITOR 50V 470P	1	
C4616	ECUX1H102ZFV	C.CAPACITOR CH 50V 1000P	1	
C4617	ECEA10M22	E.CAPACITOR 10V 22U	1	
C4618	ECQB1H822JH	P.CAPACITOR 50V 8200P	1	
C4619	ECEA1APB100	E.CAPACITOR 10V 10U	1	
C4621	ECEA0JPK101	E.CAPACITOR 6.3V 100U	1	
C4629	ECQB1H103JZ	P.CAPACITOR 50V 0.01U	1	
C4636	ECUM1H471JN	C.CAPACITOR CH 50V 470P	1	
C4638	ECQB1H822JH	P.CAPACITOR 50V 8200P	1	
C4651	ECQB1H333JA	P.CAPACITOR 50V 0.033U	1	
C4652,53	ECUM1C1052FN	C.CAPACITOR 16V 1U	2	
C6001	ECUM1H1032FN	C.CAPACITOR CH 50V 0.01U	1	
C6002	ECUM1H221JCN	C.CAPACITOR CH 50V 220P	1	
C6003	ECUM1H223KBN	C.CAPACITOR CH 50V 0.022U	1	
C6004	ECUM1H472KBN	C.CAPACITOR CH 50V 4700P	1	
C6005	ECUM1H392KBN	C.CAPACITOR CH 50V 3900P	1	
C6006	ECUM1H332KBN	C.CAPACITOR CH 50V 3300P	1	

Ref.No.	Part No.	Part Name & Description	Pcs	Remarks
C6007	ECEA0JK220	E.CAPACITOR 6.3V 22U	1	
C6008	ECUM1H180JCN	C.CAPACITOR CH 50V 18P	1	
C6009	ECUM1H220JCN	C.CAPACITOR CH 50V 22P	1	
C6010	ECUM1H103ZFN	C.CAPACITOR CH 50V 0.01U	1	
C6011	ECEA0JK220	E.CAPACITOR 6.3V 22U	1	
C6012	ECUM1H104ZFN	C.CAPACITOR CH 50V 0.1U	1	
C6013	ECUM1H103ZFN	C.CAPACITOR CH 50V 0.01U	1	
C6014,15	ECUM1H271JCN	C.CAPACITOR CH 50V 270P	2	
C6016,17	ECUM1H103ZFN	C.CAPACITOR CH 50V 0.01U	2	
C6018	ECEA1CKA100	E.CAPACITOR 16V 10U	1	
C6019	ECEA0JK330	E.CAPACITOR 6.3V 33U	1	
C6020	ECUM1H103ZFN	C.CAPACITOR CH 50V 0.01U	1	
C6021	ECUM1H104ZFN	C.CAPACITOR CH 50V 0.1U	1	
C7002-05	ECUM1H103ZFN	C.CAPACITOR CH 50V 0.01U	4	
C7006	ECEA1CK100	E.CAPACITOR 16V 10U	1	
C7007,08	ECUM1H103ZFN	C.CAPACITOR CH 50V 0.01U	2	
C7009	ECEA0JK470	E.CAPACITOR 6.3V 47U	1	
C7010	ECEA0JK101	E.CAPACITOR 6.3V 100U	1	
C7011	EECS5R5T224N	E.CAPACITOR 5.5V 0.22U	1	
C7012	ECUM1H103ZFN	C.CAPACITOR CH 50V 0.01U	1	
C7013	ECEA0JK221	E.CAPACITOR 6.3V 220U	1	
C7018-20	ECUM1H104ZFN	C.CAPACITOR CH 50V 0.1U	3	
C7023	ECUM1H104ZFN	C.CAPACITOR CH 50V 0.1U	1	
C7651	ECEA1CKN100	E.CAPACITOR 16V 10U	1	
C7653	ECUM1H561JCN	C.CAPACITOR CH 50V 560P	1	
C7654	ECQB1H103JH	P.CAPACITOR 50V 0.01U	1	
C7655,56	ECEA1HK010	E.CAPACITOR 50V 1U	2	
C7657	ECUM1H103ZFN	C.CAPACITOR CH 50V 0.01U	1	
C7658	ECQP1H562JZ	P.CAPACITOR 50V 5600P	1	
C7659	ECQB1H272JH	P.CAPACITOR 50V 2700P	1	
C7661	ECQV1H104JZ	P.CAPACITOR 50V 0.1U	1	
C7662	ECQV1H683JZ	P.CAPACITOR 50V 0.068U	1	
C7663	ECQV1H823JZ	P.CAPACITOR 50V 0.082U	1	
C7664	ECQB1H273JH	P.CAPACITOR 50V 0.027U	1	
C7665,66	ECUM1H103ZFN	C.CAPACITOR CH 50V 0.01U	2	
C7667	ECEA1HKA100	E.CAPACITOR 50V 10U	1	
C7670	ECUM1H103ZFN	C.CAPACITOR CH 50V 0.01U	1	
C7675	ECEA1HKN010	E.CAPACITOR 50V 1U	1	
C7676,77	ECUM1H103ZFN	C.CAPACITOR CH 50V 0.01U	2	
C7679	ECEA1HKN010	E.CAPACITOR 50V 1U	1	
C7680	ECEA1HK010	E.CAPACITOR 50V 1U	1	
C7681,82	ECUM1H103ZFN	C.CAPACITOR CH 50V 0.01U	2	
C7901-03	ECUX1H103ZFV	C.CAPACITOR CH 50V 0.01U	3	
C7904	ECEA1CK470	E.CAPACITOR 16V 47U	1	
C7905	ECUX1H103ZFV	C.CAPACITOR CH 50V 0.01U	1	
C7906	ECEA1CK470	E.CAPACITOR 16V 47U	1	
C7907	ECUX1H103ZFV	C.CAPACITOR CH 50V 0.01U	1	
C7908	ECQV1H104JZ	P.CAPACITOR 50V 0.1U	1	
C7909	ECUX1H103ZFV	C.CAPACITOR CH 50V 0.01U	1	
C7910	ECEA1CK100	E.CAPACITOR 16V 10U	1	
C7911-13	ECUX1H103ZFV	C.CAPACITOR CH 50V 0.01U	3	
C7914	ECEA0JK470	E.CAPACITOR 6.3V 47U	1	
C7915	ECUX1H100DCV	C.CAPACITOR 50V 10P	1	
C7916	ECUX1H1032FV	C.CAPACITOR CH 50V 0.01U	1	
C7917	ECEA0JK470	E.CAPACITOR 6.3V 47U	1	
C7918	ECUX1H103ZFV	C.CAPACITOR CH 50V 0.01U	1	
C7919	ECEA0JK470	E.CAPACITOR 6.3V 47U	1	
C7920	ECEA1CK100	E.CAPACITOR 16V 10U	1	
C7921	ECQ31H102JH	P.CAPACITOR 50V 1000P	1	
C7922	ECQ31H272JH	P.CAPACITOR 50V 2700P	1	
C7923	ECUC1H151JCV	C.CAPACITOR CH 50V 150P	1	
C7924	ECEA1CKN100	E.CAPACITOR 16V 10U	1	
C7925	ECUX1H561JCV	C.CAPACITOR 50V 560P	1	
C7926	ECEA1CK100	E.CAPACITOR 16V 10U	1	
C7927	ECQ31H102JH	P.CAPACITOR 50V 1000P	1	
C7928	ECQ31H272JH	P.CAPACITOR 50V 2700P	1	
C7929	ECUX1H151JCV	C.CAPACITOR CH 50V 150P	1	
C7930	ECEA1CKN100	E.CAPACITOR 16V 10U	1	
C7931	ECUX1H561JCV	C.CAPACITOR 50V 560P	1	
C7932,33	ECEA1CKN100	E.CAPACITOR 16V 10U	2	
C7934	ECUX1H220JCV	C.CAPACITOR CH 50V 22P	1	
C7935	ECUX1H470JCV	C.CAPACITOR 50V 47P	1	
C7937	ECUX1H103ZFV	C.CAPACITOR CH 50V 0.01U	1	
C7938	ECEA1HKR47	E.CAPACITOR 50V 0.47U	1	
C7939,40	ECEA1HKN0R1	E.CAPACITOR 50V 0.1U	2	

Ref.No.		Part No.	Part Name & Description	Pcs	Remarks
C7941		ECEA1HKR47	E.CAPACITOR 50V 0.47U	1	
C7942		ECUX1H1032FV	C.CAPACITOR CH 50V 0.01U	1	
C7943		ECUX1H100DCV	C.CAPACITOR 50V 10P	1	
C7945		ECUX1H101JCV	C.CAPACITOR CH 50V 100P	1	
C7946		ECUX1H220JCV	C.CAPACITOR CH 50V 22P	1	
C7947		ECEA1HKR47	E.CAPACITOR 50V 0.47U	1	
C7948		ECUX1H103ZFV	C.CAPACITOR CH 50V 0.01U	1	
C7949		ECEA0JK330	E.CAPACITOR 6.3V 33U	1	
C7950-53		ECEA1CKN100	E.CAPACITOR 16V 10U	4	
C7954		ECEA1CK470	E.CAPACITOR 16V 47U	1	
C7955-58		ECEA1CK100	E.CAPACITOR 16V 10U	4	
C7960		ECEA1CK100	E.CAPACITOR 16V 10U	1	
C7961		ECUX1H103ZFV	C.CAPACITOR CH 50V 0.01U	1	
C7963		ECUX1H1032FV	C.CAPACITOR CH 50V 0.01U	1	
C7964		ECEA1CK100	E.CAPACITOR 16V 10U	1	
C7965,66		ECUX1H1032FV	C.CAPACITOR CH 50V 0.01U	2	
C7967		ECEA1CK100	E.CAPACITOR 16V 10U	1	
C8001		ECUM1H104ZFN	C.CAPACITOR CH 50V 0.1U	1	
			DIODES		
D302		1SS283	DIODE	1	
D303		MA151A	DIODE	1	
D304		1SS254	DIODE	1	
D710		MA3100L	DIODE	1	
D771		MA151WK	DIODE	1	
D772		MA165VT	DIODE	1	
D801,02		1SS254	DIODE	2	
D804		1SS254	DIODE	1	
D1001-03		11ES1	DIODE	3	
D1004		MA723VT	DIODE	1	(VT)
D2001		MA723VT	DIODE	1	(VT)
D2005-08		1SS254	DIODE	4	
D3001		1SS254	DIODE	1	
D3002		11EQS04	DIODE	1	
D3007		1SS254	DIODE	1	
D3008		MA221	DIODE	1	
D4001,02		1SS254	DIODE	2	
D4003		MA151WK	DIODE	1	
D4501,02		MA151H	DIODE	2	
D4503		MA151K	DIODE	1	
D4504		MA151H	DIODE	1	
D4602		MA151K	DIODE	1	
D6001-05		1SS254	DIODE	5	
D6007		1SS254	DIODE	1	
D6008,09		MA723VT	DIODE	2	(VT)
D6011		1SS254	DIODE	1	
D6012		SV03YS	DIODE	1	
D7001-04		MA723VT	DIODE	4	(VT)
D7005		1SS254	DIODE	1	
D7007		1SS254	DIODE	1	
D7009		MA151WK	DIODE	1	
D7011		MA151WK	DIODE	1	
D7501		MA151WK	DIODE	1	
D7502		RA30H2M	DIODE	1	
D7901,02		MA141WK	DIODE	2	
D7904		MA141K	DIODE	1	
D7905		MA141WA	DIODE	1	
D7906		MA141WK	DIODE	1	
D7907		MA141K	DIODE	1	
			DELAYS		
DL801		VLD0198	DELAY	1	
DL802		ESDUN124A13N	DELAY	1	
			FILTERS		
FL4501		VLF0947M	FILTER	1	
FL7901		VLF0702	FILTER	1	
FL7902		ELKAW103EB	FILTER	1	
FL7903		ELKAW101GB	COIL 100UH	1	
FL7904,05		ELKAW103EB	FILTER	2	
FL7907-11		ELKAW103EB	FILTER	5	
FL7914,15		ELKAW101GB	COIL 100UH	2	

Ref.No.		Part No.	Part Name & Description	Pcs	Remarks
FL7916		VLF0633	FILTER	1	
			INTEGRATED CIRCUITS		
IC301		VEPH29D	IC	1	
IC701		M52014SP	IC	1	
IC802		M52352FP	IC	1	
IC2001		BA6219B	IC	1	
IC2002		AN3727S	IC	1	
IC2003		XRA6439P	IC	1	
IC2005		UPC358G2	IC	1	
IC4501		XLH7770KS	IC	1	
IC4601		BA7755AF	IC	1	
IC6001		MN67434VRSA	IC	1	
IC6009		UPC358G2	IC	1	
IC7001		M66006FP	IC	1	
IC7651		AN5421	IC	1	
IC7652		AN5043	IC	1	
IC7653		MN4066BS	IC	1	
IC7901		TB1204F	IC	1	
IC7902		TA2009F	IC	1	
IC7903		M5238FP	IC	1	
			COILS		
L303		ELESQ220KA	COIL 22UH	1	
L304		ELESQ101KA	COIL 100UH	1	
L305		ELESP121JA	COIL 120UH	1	
L306		ELESQ390KA	COIL 39UH	1	
L701		ELESQ680KA	COIL 68UH	1	
L713		VLQ0213K1R2	COIL 1.2UH	1	
L714		ELQT1R2KB	COIL 1.2UH	1	
L718		ELESQ680KA	COIL 68UH	1	
L719		ELESQ8R2KA	COIL 8.2UH	1	
L801,02		VLQ0540J150	COIL 15UH	2	
L803		ELESQ220KA	COIL 22UH	1	
L804		ELESQ101KA	COIL 100UH	1	
L805		ELESQ270KA	COIL 27UH	1	
L807,08		VLQ0540J150	COIL 15UH	2	
L809		ELESQ101KA	COIL 100UH	1	
L811,12		ELESQ101KA	COIL 100UH	2	
L1001		VLP0074	COIL	1	
L2001		VLP0083	FILTER	1	
L2002		VLQ0188J330	COIL 33UH	1	
L2003		ELESQ102KA	COIL 1000UH	1	
L2004		ELESQ101KA	COIL 100UH	1	
L2005		VLP0074	COIL	1	
L2006		VLQ0188J330	COIL 33UH	1	
L3004		VLQ0188J330	COIL 33UH	1	
L3005		ELESQ270JA	COIL 27UH	1	
L3007		ELESQ6R8JA	COIL 6.8UH	1	
L3008		ELESQ5R6JA	COIL 5.6UH	1	
L3009		ELESQ120JA	COIL 12UH	1	
L3010		ELESQ101JA	COIL 100UH	1	
L3011		VLQ0188J330	COIL 33UH	1	
L3012		ELESQ151KA	COIL 150UH	1	
L3013		ELESQ820JA	COIL 82UH	1	
L4001,02		VLQEL06F101K	COIL 100UH	2	
L4003		ELESQ471KA	COIL 470UH	1	
L4004		VLQ0188J330	COIL 33UH	1	
L4501,02		ELESQ101KA	COIL 100UH	2	
L4601		VLQEL07F153J	COIL 15MH	1	
L5001		VLP0074	COIL	1	
L7001		ELESQ3R3KA	COIL 3.3UH	1	
L7002		ELESQ1R0KA	COIL 1UH	1	
L7003,04		VLQ0540J330	COIL 33UH	2	
L7007		VLQ0540J330	COIL 33UH	1	
L7008		ELESQ1R0KA	COIL 1UH	1	
L7010		VLQEL06F101K	COIL 100UH	1	
L7012		VLQ0555	COIL	1	
L7901,02		VLP0083	FILTER	2	
			CONNECTORS		
P1001		VJP1144	CONNECTOR (MALE) 5P	1	

Ref.No.		Part No.	Part Name & Description	Pcs	Remarks
P1001		WJS1144	CONNECTOR (FEMALE) 6P	1	
P1002		WJP1141	CONNECTOR (MALE) 2P	1	
P1003		WJP1232T	CONNECTOR (MALE) 5P	1	
P1003		WJS1232	CONNECTOR (FEMALE) 5P	1	
P1102		WJS1237T	CONNECTOR (FEMALE)	1	
P1506		WJS1736	CONNECTOR (FEMALE) 3P	1	
P1509		WJS1141	CONNECTOR (FEMALE)	1	
P2001		WJP1232T	CONNECTOR (MALE) 5P	1	
P2001		WJS1738	CONNECTOR (FEMALE)	1	
P2002		WJP1230T	CONNECTOR (MALE) 3P	1	
P2002		WJS1736	CONNECTOR (FEMALE) 3P	1	
P2003		WJS3193A015A	CONNECTOR (FEMALE)	1	
P2902		WJS1738	CONNECTOR (FEMALE)	1	
P3001		WJS3193A020A	CONNECTOR (FEMALE)	1	
P4002		WJP1230T	CONNECTOR (MALE) 3P	1	
P4002		WJS1230	CONNECTOR (FEMALE) 3P	1	
P4003		WJS2331	CONNECTOR (FEMALE)	1	
P4011		WJP1231T	CONNECTOR (MALE) 4P	1	
P4011		WJS1737	CONNECTOR (FEMALE)	1	
P4013		WJP1230T	CONNECTOR (MALE) 3P	1	
P6001		WJS3193A013A	CONNECTOR (FEMALE)	1	
P6005		WJP1236T	CONNECTOR (MALE) 9P	1	
P6005		WJS1239	CONNECTOR (FEMALE) 12P	1	
P6501		WJS1239	CONNECTOR (FEMALE) 12P	1	
P7401		WJS3193A012A	CONNECTOR (FEMALE)	1	
P7402		WJS3193A024A	CONNECTOR (FEMALE)	1	
P7702		WJS1737	CONNECTOR (FEMALE)	1	
FK7901,02		WJR0477	PACK PIN	2	
PP3001		WJP3044G009W	CONNECTOR (MALE)	1	
PP3002		WJP3044G012W	CONNECTOR (MALE)	1	
PP3003		WJP3044G006W	CONNECTOR (MALE)	1	
PP3005		WJP3042A016W	CONNECTOR (MALE)	1	
PP3006		WJP3042A017W	CONNECTOR (MALE)	1	
PP4001-03		WJP3186A018	CONNECTOR (MALE)	3	
PP7401-03		WJP3043A005W	CONNECTOR (MALE) 5P	3	
PP7404		WJP3043A006W	CONNECTOR (MALE) 6P	1	
PP7405		WJP3043A004W	CONNECTOR (MALE) 4P	1	
PP7406		WJP3043A010W	CONNECTOR (MALE)	1	
PS301		WJS3044F009W	CONNECTOR (FEMALE)	1	
PS302		WJS3044F012W	CONNECTOR (FEMALE)	1	
PS303		WJS3044F006W	CONNECTOR (FEMALE)	1	
PS701-03		WJS3043B005W	CONNECTOR (FEMALE) 5P	3	
PS704		WJS3043B006W	CONNECTOR (FEMALE) 6P	1	
PS4001-03		WJS3186B018	CONNECTOR (FEMALE)	3	
			TRANSISTORS		
Q703		MSD601-S	TRANSISTOR	1	
Q711		MSB709-R	TRANSISTOR	1	
Q712		2SD1996-R	TRANSISTOR	1	
Q713		2SD1328-S	TRANSISTOR	1	
Q771		MSD601	TRANSISTOR-RESISTOR	1	
Q772		MSD601-S	TRANSISTOR	1	
Q801		MSC2295	TRANSISTOR	1	
Q802		MSD601	TRANSISTOR-RESISTOR	1	
Q808		MSB709	TRANSISTOR	1	
Q2001		MSB709	TRANSISTOR	1	
Q3001		MSB709	TRANSISTOR	1	
Q3002		MSC2295	TRANSISTOR	1	
Q3003		MSB709	TRANSISTOR	1	
Q3004		MSC2295	TRANSISTOR	1	
Q3007		MSD601	TRANSISTOR-RESISTOR	1	
Q3009		MSD601	TRANSISTOR-RESISTOR	1	
Q3010		2SB710-R	TRANSISTOR	1	(R,S)
Q4001		2SB710-R	TRANSISTOR	1	(R,S)
Q4002		2SB1321-R	TRANSISTOR	1	(R,S)
Q4003		2SD602A-R	TRANSISTOR	1	
Q4004,05		MSD601	TRANSISTOR-RESISTOR	2	
Q4006		MSB709	TRANSISTOR	1	

Ref.No.		Part No.	Part Name & Description	Pcs	Remarks
Q4007		2SB1378-R	TRANSISTOR	1	
Q4008		2SB1321-R	TRANSISTOR	1	(R,S)
Q4009		MSD601	TRANSISTOR-RESISTOR	1	
Q4501		2SD655	TRANSISTOR	1	
Q4551		2SB561	TRANSISTOR	1	
Q4601		MSD1328	TRANSISTOR	1	
Q6001		MSD601	TRANSISTOR-RESISTOR	1	
Q6002		2SD1991A	TRANSISTOR	1	
Q6003		MSB709	TRANSISTOR	1	
Q6004		2SD655	TRANSISTOR	1	
Q6005		MSD601	TRANSISTOR-RESISTOR	1	
Q6006		MSB709	TRANSISTOR	1	
Q7901,02		MSD601	TRANSISTOR-RESISTOR	2	
Q7903		2SC3931CD	TRANSISTOR	1	
Q7904-07		2SB1219	TRANSISTOR	4	
Q7908,09		2SC3929	TRANSISTOR	2	
Q7910		2SD1820	TRANSISTOR	1	
Q7913		2SB1218-Q	TRANSISTOR	1	
Q7914,15		2SD1979-S	TRANSISTOR	2	
Q7916		2SB1219	TRANSISTOR	1	
Q8001		MSD601	TRANSISTOR-RESISTOR	1	
			COMBINATION PARTS		
QR303		MRN2404	TRANSISTOR-RESISTOR	1	
QR304		IMH5	TRANSISTOR-RESISTOR	1	
QR306		MRN1404	TRANSISTOR-RESISTOR	1	
QR702		MRN1404	TRANSISTOR-RESISTOR	1	
QR713		MRN1402	TRANSISTOR-RESISTOR	1	
QR804		MRN2404	TRANSISTOR-RESISTOR	1	
QR805		MRN1404	TRANSISTOR-RESISTOR	1	
QR1001		XN1211	TRANSISTOR-RESISTOR	1	
QR2001		XN1213	TRANSISTOR-TRANSISTOR	1	
QR2002		MRN2404	TRANSISTOR-RESISTOR	1	
QR3001		MRN2402	TRANSISTOR-RESISTOR	1	
QR3002		DTC363EK	COMBI.TR-R	1	
QR3005		MRN2402	TRANSISTOR-RESISTOR	1	
QR3007		DTC363EK	COMBI.TR-R	1	
QR4001		DTC363EK	COMBI.TR-R	1	
QR4002		XN1111	TRANSISTOR-RESISTOR	1	
QR4005		MRN1403	TRANSISTOR-RESISTOR	1	
QR4006		DTC363EK	COMBI.TR-R	1	
QR4007		MRN1404	TRANSISTOR-RESISTOR	1	
QR4508,09		MRN2404	TRANSISTOR-RESISTOR	2	
QR4510		MRN1403	TRANSISTOR-RESISTOR	1	
QR4602		MRN2402	TRANSISTOR-RESISTOR	1	
QR4603		MRN1404	TRANSISTOR-RESISTOR	1	
QR6003		XN1211	TRANSISTOR-RESISTOR	1	
QR6004		UN2114	TRANSISTOR-RESISTOR	1	
QR6005		MRN1404	TRANSISTOR-RESISTOR	1	
QR6007		XN1213	TRANSISTOR-TRANSISTOR	1	
QR6010,11		MRN1404	TRANSISTOR-RESISTOR	2	
QR7001		MRN1402	TRANSISTOR-RESISTOR	1	
QR7005		MRN1403	TRANSISTOR-RESISTOR	1	
QR7601		MRN1404	TRANSISTOR-RESISTOR	1	
QR7901,02		UN5213	TRANSISTOR	2	
QR7903		UN5112	TRANSISTOR-RESISTOR	1	
QR7904		UN5214	TRANSISTOR-RESISTOR	1	
QR7905,06		UN5213	TRANSISTOR	2	
			RESISTORS		
R304		ERJ6GM20R00	M.RESISTOR CH 1/10W 0	1	
R307		ERJ6GEYJ472	M.RESISTOR CH 1/10W 4.7K	1	
R308		ERJ6GMYJ392	M.RESISTOR CH 1/10W 3.9K	1	
R310		ERJ6GMYJ272	M.RESISTOR CH 1/10W 2.7K	1	
R311		ERJ6GMYJ103	M.RESISTOR CH 1/10W 10K	1	
R312		ERJ6GMYJ473	M.RESISTOR CH 1/10W 47K	1	
R313		ERJ6GMYJ472	M.RESISTOR CH 1/10W 4.7K	1	
R315		ERJ6GMYJ393	M.RESISTOR CH 1/10W 39K	1	
R316		ERJ6GMYJ392	M.RESISTOR CH 1/10W 3.9K	1	
R318,19		ERJ6GMYJ103	M.RESISTOR CH 1/10W 10K	2	
R322		ERJ6GMYJ332	M.RESISTOR CH 1/10W 3.3K	1	
R327		ERJ6GEYK125	M.RESISTOR CH 1/10W 1.2M	1	
R716		ERJ6GEYJ272	M.RESISTOR CH 1/10W 2.7K	1	

Ref.No.	Part No.	Part Name & Description	Pcs	Remarks
R719	ERJ6GEYJ105	M.RESISTOR CH 1/10W 1M	1	
R720	ERJ6GEYJ682	M.RESISTOR CH 1/10W 6.8K	1	
R721	ERJ6GEYJ471	M.RESISTOR CH 1/10W 470	1	
R724	ERJ6GEYJ822	M.RESISTOR CH 1/10W 8.2K	1	
R725	ERJ6GEYJ222	M.RESISTOR CH 1/10W 2.2K	1	
R727	ERJ6GEYJ681	M.RESISTOR CH 1/10W 680	1	
R728	ERDS2TJ102	C.RESISTOR 1/4W 1K	1	
R729	ERJ6GEYJ681	M.RESISTOR CH 1/10W 680	1	
R730	ERJ6GEYJ272	M.RESISTOR CH 1/10W 2.7K	1	
R736	ERJ6GEYJ471	M.RESISTOR CH 1/10W 470	1	
R737	ERJ6GEYJ102	M.RESISTOR CH 1/10W 1K	1	
R738	ERJ6GEYJ562	M.RESISTOR CH 1/10W 5.6K	1	
R739	ERJ6GEYJ681	M.RESISTOR CH 1/10W 680	1	
R740	ERJ6GEYJ394	M.RESISTOR CH 1/10W 390K	1	
R741	ERJ6GEYJ222	M.RESISTOR CH 1/10W 2.2K	1	
R742	ERJ6GEYJ272	M.RESISTOR CH 1/10W 2.7K	1	
R743	ERJ6GEYJ474	M.RESISTOR CH 1/10W 470K	1	
R744	ERJ6GEYJ272	M.RESISTOR CH 1/10W 2.7K	1	
R745	ERJ6GEYJ181	M.RESISTOR CH 1/10W 180	1	
R746	ERDS2TJ151	C.RESISTOR 1/4W 150	1	
R750	ERJ6GEYJ102	M.RESISTOR CH 1/10W 1K	1	
R757,58	ERJ6GEYJ102	M.RESISTOR CH 1/10W 1K	2	
R759	ERJ6GEYJ103	M.RESISTOR CH 1/10W 10K	1	
R763	ERJ6GEYJ221	M.RESISTOR CH 1/10W 220	1	
R772	ERJ6GEYJ271	M.RESISTOR CH 1/10W 270	1	
R773	ERJ6GEYJ472	M.RESISTOR CH 1/10W 4.7K	1	
R774	ERJ6GEYJ562	M.RESISTOR CH 1/10W 5.6K	1	
R781	ERJ6GEYJ103	M.RESISTOR CH 1/10W 10K	1	
R790	ERJ6GEYJ222	M.RESISTOR CH 1/10W 2.2K	1	
R791	ERDS2TJ272	C.RESISTOR 1/4W 2.7K	1	
R798	ERJ6GEYJ104	M.RESISTOR CH 1/10W 100K	1	
R801	ERJ6GMYJ102	M.RESISTOR CH 1/10W 1K	1	
R802,03	ERJ6GMYJ471	M.RESISTOR CH 1/10W 470	2	
R804,05	ERJ6GMYJ103	M.RESISTOR CH 1/10W 10K	2	
R806	ERJ6GMYJ221	M.RESISTOR CH 1/10W 220	1	
R807	ERJ6GMYJ271	M.RESISTOR CH 1/10W 270	1	
R813	ERJ6GMYJ102	M.RESISTOR CH 1/10W 1K	1	
R814	ERJ6GMYJ393	M.RESISTOR CH 1/10W 39K	1	
R815	ERJ6GMYJ821	M.RESISTOR CH 1/10W 820	1	
R818	ERJ6GMYJ681	M.RESISTOR CH 1/10W 680	1	
R819	ERJ6GMYJ272	M.RESISTOR CH 1/10W 2.7K	1	
R820,21	ERJ6GMYJ122	M.RESISTOR CH 1/10W 1.2K	2	
R823,24	ERJ6GMYJ152	M.RESISTOR CH 1/10W 1.5K	2	
R825	ERJ6GMZOR00	M.RESISTOR CH 1/10W 0	1	
R827	ERJ6GMYJ122	M.RESISTOR CH 1/10W 1.2K	1	
R828	ERJ6GMYJ271	M.RESISTOR CH 1/10W 270	1	
R829	ERJ6GMYJ122	M.RESISTOR CH 1/10W 1.2K	1	
R830	ERJ6GMYJ271	M.RESISTOR CH 1/10W 270	1	
R831	ERJ6GMYJ681	M.RESISTOR CH 1/10W 680	1	
R832	ERJ6GMYJ154	M.RESISTOR CH 1/10W 150K	1	
R833	ERJ6GMYJ204	M.RESISTOR CH 1/10W 200K	1	
R834	ERJ6GMYJ153	M.RESISTOR CH 1/10W 15K	1	
R835	ERJ6GMYJ103	M.RESISTOR CH 1/10W 10K	1	
R836	ERJ6GMYJ154	M.RESISTOR CH 1/10W 150K	1	
R848	ERJ6GMYJ222	M.RESISTOR CH 1/10W 2.2K	1	
R849	ERJ6GMYJ473	M.RESISTOR CH 1/10W 47K	1	
R850	ERJ6GMYJ563	M.RESISTOR CH 1/10W 56K	1	
R853	ERJ6GMYJ473	M.RESISTOR CH 1/10W 47K	1	
R855	ERJ6GMYJ152	M.RESISTOR CH 1/10W 1.5K	1	
R856	ERJ6GMYJ102	M.RESISTOR CH 1/10W 1K	1	
R857	ERJ6GMYJ101	M.RESISTOR 1/10W 100	1	
R859	ERJ6GMYJ102	M.RESISTOR CH 1/10W 1K	1	
R1001	ERJ6GMYJ103	M.RESISTOR CH 1/10W 10K	1	
R2001	ERJ6GMYJ104	M.RESISTOR CH 1/10W 100K	1	
R2002	ERJ6GMYJ332	M.RESISTOR CH 1/10W 3.3K	1	
R2003	ERJ6GMYJ222	M.RESISTOR CH 1/10W 2.2K	1	
R2004	ERG12SJ561	M.RESISTOR 1/2W 560	1	
R2005	ERJ6GMYG821	M.RESISTOR CH 1/10W 820	1	
R2006	ERJ6GMYJ102	M.RESISTOR CH 1/10W 1K	1	
R2007	ERJ6GMYG432	M.RESISTOR CH 1/10W 4.3K	1	
R2008	ERJ6GMYG473	M.RESISTOR CH 1/10W 47K	1	
R2012	ERJ6GMYJ684	M.RESISTOR CH 1/10W 680K	1	
R2013	ERJ6GMYG103	M.RESISTOR CH 1/10W 10K	1	
R2014	ERJ6GMYG133	M.RESISTOR CH 1/10W 13K	1	
R2015	ERJ6GMYJ272	M.RESISTOR CH 1/10W 2.7K	1	

Ref.No.	Part No.	Part Name & Description	Pcs	Remarks
R2016	ERJ6GMYJ105	M.RESISTOR CH 1/10W 1M	1	
R2017	ERDS2CKJ6800	M.RESISTOR 1/4W 680	1	
R2018	ERX12SJR47	M.RESISTOR CH 1/2W 0.47	1	
R2019-21	ERDS2TJ560	C.RESISTOR 1/4W 56	3	
R2022	ERJ6GMYJ102	M.RESISTOR CH 1/10W 1K	1	
R2023	ERJ6GMZOR00	M.RESISTOR CH 1/10W 0	1	
R2024	ERJ6GMYJ563	M.RESISTOR CH 1/10W 56K	1	
R2030	ERJ6GMYJ683	M.RESISTOR CH 1/10W 68K	1	
R2031	ERJ6GMYJ563	M.RESISTOR CH 1/10W 56K	1	
R2032	ERJ6GMYJ333	M.RESISTOR CH 1/10W 33K	1	
R2034	ERJ6GMYJ682	M.RESISTOR CH 1/10W 6.8K	1	
R2035,36	ERJ6GMYJ223	M.RESISTOR CH 1/10W 22K	2	
R2038	ERJ6GMYJ392	M.RESISTOR CH 1/10W 3.9K	1	
R2039	ERJ6GMYJ105	M.RESISTOR CH 1/10W 1M	1	
R2040,41	ERJ6GMYJ472	M.RESISTOR CH 1/10W 4.7K	2	
R2042	ERJ6GMYJ221	M.RESISTOR CH 1/10W 220	1	
R2043	ERJ6GMYJ105	M.RESISTOR CH 1/10W 1M	1	
R2044	ERJ6GMYJ392	M.RESISTOR CH 1/10W 3.9K	1	
R2045	ERJ6GMYJ562	M.RESISTOR CH 1/10W 5.6K	1	
R2046	ERJ6GMYJ102	M.RESISTOR CH 1/10W 1K	1	
R2047,48	ERJ6GMYJ223	M.RESISTOR CH 1/10W 22K	2	
R2049	ERJ6GMYJ683	M.RESISTOR CH 1/10W 68K	1	
R2050	ERJ6GMYJ332	M.RESISTOR CH 1/10W 3.3K	1	
R2051	ERJ6GMYJ392	M.RESISTOR CH 1/10W 3.9K	1	
R2052	ERJ6GMYJ222	M.RESISTOR CH 1/10W 2.2K	1	
R2053,54	ERJ6GMYJ223	M.RESISTOR CH 1/10W 22K	2	
R2055	ERJ6GMZOR00	M.RESISTOR CH 1/10W 0	1	
R2056	ERX1SJ1R8	M.RESISTOR 1W 1.8	1	
R2058	ERJ6GMZOR00	M.RESISTOR CH 1/10W 0	1	
R3001	ERDS2TJ222	C.RESISTOR 1/4W 2.2K	1	
R3002	ERDS2TJ102	C.RESISTOR 1/4W 1K	1	
R3003	ERJ6GMYJ102	M.RESISTOR CH 1/10W 1K	1	
R3004	ERJ6GMYJ561	M.RESISTOR CH 1/10W 560	1	
R3005	ERJ6GMYJ391	M.RESISTOR CH 1/10W 390	1	
R3006	ERJ6GMYJ561	M.RESISTOR CH 1/10W 560	1	
R3007	ERJ6GMYJ102	M.RESISTOR CH 1/10W 1K	1	
R3014	ERJ6GMYJ103	M.RESISTOR CH 1/10W 10K	1	
R3018	ERJ6GMYJ332	M.RESISTOR CH 1/10W 3.3K	1	
R3019	ERJ6GMYJ272	M.RESISTOR CH 1/10W 2.7K	1	
R3021	ERJ6GMZOR00	M.RESISTOR CH 1/10W 0	1	
R3023	ERJ6GMYJ471	M.RESISTOR CH 1/10W 470	1	
R3024	ERJ6GMZOR00	M.RESISTOR CH 1/10W 0	1	
R3025	ERJ6GMYJ821	M.RESISTOR CH 1/10W 820	1	
R3027	ERJ6GMYJ821	M.RESISTOR CH 1/10W 820	1	
R3028	ERJ6GMYJ750	M.RESISTOR CH 1/10W 75	1	
R3029	ERJ6GMYJ103	M.RESISTOR CH 1/10W 10K	1	
R3033	ERJ6GMYJ152	M.RESISTOR CH 1/10W 1.5K	1	
R3034	ERJ6GMYJ102	M.RESISTOR CH 1/10W 1K	1	
R3035	ERJ6GMYJ561	M.RESISTOR CH 1/10W 560	1	
R3037	ERJ6GMYJ222	M.RESISTOR CH 1/10W 2.2K	1	
R3038	ERJ6GMYJ102	M.RESISTOR CH 1/10W 1K	1	
R3039	ERJ6GMYJ681	M.RESISTOR CH 1/10W 680	1	
R3040,41	ERJ6GMYJ473	M.RESISTOR CH 1/10W 47K	2	
R3042	ERJ6GMYJ222	M.RESISTOR CH 1/10W 2.2K	1	
R3043	ERJ6GMYJ103	M.RESISTOR CH 1/10W 10K	1	
R3048,49	ERJ6GMZOR00	M.RESISTOR CH 1/10W 0	2	
R4001	ERJ6GMYJ332	M.RESISTOR CH 1/10W 3.3K	1	
R4002	ERJ6GMYJ103	M.RESISTOR CH 1/10W 10K	1	
R4003	ERJ6GMYJ273	M.RESISTOR CH 1/10W 27K	1	
R4004	ERJ6GMYG273	M.RESISTOR CH 1/10W 27K	1	
R4005	ERJ6GMYG823	M.RESISTOR CH 1/10W 82K	1	
R4006	ERJ6GMYG683	M.RESISTOR CH 1/10W 68K	1	
R4007	ERJ6GMYG100	M.RESISTOR CH 1/10W 10	1	
R4008,09	ERJ6GMYJ472	M.RESISTOR CH 1/10W 4.7K	2	
R4010	ERJ6GMYJ102	M.RESISTOR CH 1/10W 1K	1	
R4011	ERDS2TJ471	C.RESISTOR 1/4W 470	1	
R4013	ERJ6GMYJ332	M.RESISTOR CH 1/10W 3.3K	1	
R4014	ERJ6GMYJ682	M.RESISTOR CH 1/10W 6.8K	1	
R4015	ERJ6GMYJ332	M.RESISTOR CH 1/10W 3.3K	1	
R4016	ERJ6GMYJ562	M.RESISTOR CH 1/10W 5.6K	1	
R4017	ERJ6GMYJ152	M.RESISTOR CH 1/10W 1.5K	1	
R4018	ERDS2TJ273	C.RESISTOR 1/4W 27K	1	
R4019	ERJ6GMYJ153	M.RESISTOR CH 1/10W 15K	1	
R4020	ERJ6GMYJ123	M.RESISTOR CH 1/10W 12K	1	
R4021	ERJ6GMYJ153	M.RESISTOR CH 1/10W 15K	1	

Ref.No.	Part No.	Part Name & Description	Pcs	Remarks
R4022	ERJ6GMYJ472	M.RESISTOR CH 1/10W 4.7K	1	
R4024	ERJ6GMYJ332	M.RESISTOR CH 1/10W 3.3K	1	
R4025	ERJ6GMYJ333	M.RESISTOR CH 1/10W 33K	1	
R4026	ERJ6GMYJ473	M.RESISTOR CH 1/10W 47K	1	
R4027	ERJ6GMYJ433	M.RESISTOR CH 1/10W 43K	1	
R4028	ERJ6GMYJ332	M.RESISTOR CH 1/10W 3.3K	1	
R4029	ERJ6GMYJ222	M.RESISTOR CH 1/10W 2.2K	1	
R4032	ERJ6GMYJ392	M.RESISTOR CH 1/10W 3.9K	1	
R4034	ERJ6GMYJ823	M.RESISTOR CH 1/10W 82K	1	
R4035,36	ERJ6GMYJ473	M.RESISTOR CH 1/10W 47K	2	
R4037	ERJ6GMYJ104	M.RESISTOR CH 1/10W 100K	1	
R4501,02	ERJ3GEY0R00	M.RESISTOR CH 1/16W 0	2	
R4503	VRE0071E36C	M.RESISTOR 1/10W	1	
R4504,05	ERJ6GEYJ393	M.RESISTOR CH 1/10W 39K	2	
R4506,07	ERJ6GEYJ473	M.RESISTOR CH 1/10W 47K	2	
R4508	ERJ6GEYG224	M.RESISTOR CH 1/10W 220K	1	
R4509	ERJ6GEYJ822	M.RESISTOR CH 1/10W 8.2K	1	
R4510	ERJ6GEYJ621	M.RESISTOR CH 1/10W 620	1	
R4511	ERJ6GEYG303	M.RESISTOR CH 1/10W 30K	1	
R4512	VRE0034E163	M.RESISTOR CH 1/10W 16K	1	
R4513	ERJ3GEYG103	M.RESISTOR CH 1/16W 10K	1	
R4514	ERJ6GEYJ223	M.RESISTOR CH 1/10W 22K	1	
R4518,19	ERJ6GMZ0R00	M.RESISTOR CH 1/10W 0	2	
R4522	ERJ6GEYJ225	M.RESISTOR CH 1/10W 2.2M	1	
R4527	VRE0034E333	M.RESISTOR CH 1/10W 33K	1	
R4528	VRE0034E153	M.RESISTOR CH 1/10W 15K	1	
R4529	ERJ6GEYG562	M.RESISTOR CH 1/10W 5.6K	1	
R4530	ERJ3GEYJ334	M.RESISTOR CH 1/16W 330K	1	
R4534	ERJ6GEYJ472	M.RESISTOR CH 1/10W 4.7K	1	
R4535	ERJ3GEYJ104	M.RESISTOR CH 1/16W 100K	1	
R4539	ERJ6GEYJ104	M.RESISTOR CH 1/10W 100K	1	
R4540	ERJ3GEY0R00	M.RESISTOR CH 1/16W 0	1	
R4541	ERJ6GEYJ152	M.RESISTOR CH 1/10W 1.5K	1	
R4542	ERJ6GEYJ222	M.RESISTOR CH 1/10W 2.2K	1	
R4543	ERJ3GEYJ472	M.RESISTOR CH 1/16W 4.7K	1	
R4551,52	ERJ3GEYJ393	M.RESISTOR CH 1/16W 39K	2	
R4553	ERJ6GEYJ273	M.RESISTOR CH 1/10W 27K	1	
R4554	ERJ3GEYJ273	M.RESISTOR CH 1/16W 27K	1	
R4558	ERJ6GEYG224	M.RESISTOR CH 1/10W 220K	1	
R4561	ERJ6GEYG303	M.RESISTOR CH 1/10W 30K	1	
R4562	VRE0034E10C	M.RESISTOR 1/10W	1	
R4563	ERJ3GEYG272	M.RESISTOR CH 1/16W 2.7K	1	
R4568	ERJ6GEYJ273	M.RESISTOR CH 1/10W 27K	1	
R4569	ERJ3GEYJ273	M.RESISTOR CH 1/16W 27K	1	
R4573	ERJ6GEYJ152	M.RESISTOR CH 1/10W 1.5K	1	
R4577	ERJ3GEYJ473	M.RESISTOR CH 1/16W 47K	1	
R4578	VRE0034E473	M.RESISTOR CH 1/10W 47K	1	
R4581	ERJ6GEYJ104	M.RESISTOR CH 1/10W 100K	1	
R4583	ERJ3GEYJ102	M.RESISTOR 1/16W 1K	1	
R4584	ERJ6GEYJ152	M.RESISTOR CH 1/10W 1.5K	1	
R4585	ERJ3GEY0R00	M.RESISTOR CH 1/16W 0	1	
R4586	ERJ6GEYJ152	M.RESISTOR CH 1/10W 1.5K	1	
R4587,88	ERJ3GEYJ273	M.RESISTOR CH 1/16W 27K	2	
R4591	ERJ3GEYJ473	M.RESISTOR CH 1/16W 47K	1	
R4592	ERJ6GEYJ563	M.RESISTOR CH 1/10W 56K	1	
R4593	ERJ6GEYJ472	M.RESISTOR CH 1/10W 4.7K	1	
R4594	ERJ3GEYJ473	M.RESISTOR CH 1/16W 47K	1	
R4603	ERJ3GEYG183	M.RESISTOR CH 1/16W 18K	1	
R4606	ERJ6GEYJ562	M.RESISTOR CH 1/10W 5.6K	1	
R4610	ERJ6GEYJ473	M.RESISTOR CH 1/10W 47K	1	
R4611,12	ERJ6GEYJ331	M.RESISTOR CH 1/10W 330	2	
R4613	ERJ6GEYJ394	M.RESISTOR CH 1/10W 390K	1	
R4615	ERJ6GEYJ133	M.RESISOTR CH 1/10W 13K	1	
R4616	ERJ6GEYJ105	M.RESISTOR CH 1/10W 1M	1	
R4638	ERJ6GMZ0R00	M.RESISTOR CH 1/10W 0	1	
R4649	ERJ3GEYG470	M.RESISTOR CH 1/16W 47	1	
R4651	ERJ6GEYJ101	M.RESISTOR CH 1/10W 100	1	
R4653	ERJ6GEYJ471	M.RESISTOR CH 1/10W 470	1	
R4654	ERJ6GEYJ223	M.RESISTOR CH 1/10W 22K	1	
R4655	ERJ6GEYJ562	M.RESISTOR CH 1/10W 5.6K	1	
R4656	ERJ6GEYG243	M.RESISTOR CH 1/10W 24K	1	
R4657	ERJ6GEYJ392	M.RESISTOR CH 1/10W 3.9K	1	
R4659	ERJ3GEYJ123	M.RESISTOR CH 1/16W 12K	1	
R4666	ERJ6GEYJ471	M.RESISTOR CH 1/10W 470	1	
R6001-04	ERJ6GMYJ102	M.RESISTOR CH 1/10W 1K	4	

Ref.No.	Part No.	Part Name & Description	Pcs	Remarks
R6005-07	ERJ6GMYJ333	M.RESISTOR CH 1/10W 33K	3	
R6009	ERJ6GMYG332	M.RESISTOR CH 1/10W 3.3K	1	
R6010	ERJ6GMYG102	M.RESISTOR CH 1/10W 1K	1	
R6011	ERJ6GMYG112	M.REISITOR CH 1/10W 1.1K	1	
R6012	ERJ6GMYJ223	M.RESISTOR CH 1/10W 22K	1	
R6013	ERDS2CKG2000	M.RESISTOR 1/4W 200	1	
R6014,15	EPJ6GMYG223	M.RESISTOR CH 1/10W 22K	2	
R6016	ERJ6GMYJ103	M.RESISTOR CH 1/10W 10K	1	
R6017	ERJ6GMYJ271	M.RESISTOR CH 1/10W 270	1	
R6018	ERJ6GMYJ683	M.RESISTOR CH 1/10W 68K	1	
R6019	ERJ6GMYJ104	M.RESISTOR CH 1/10W 100K	1	
R6020	ERJ6GMYJ101	M.RESISTOR 1/10W 100	1	
R6021	ERJ6GMYJ103	M.RESISTOR CH 1/10W 10K	1	
R6022	ERJ6GMYJ222	M.RESISTOR CH 1/10W 2.2K	1	
R6023,24	ERJ6GMYJ103	M.RESISTOR CH 1/10W 10K	2	
R6025,26	ERJ6GMYJ272	M.RESISTOR CH 1/10W 2.7K	2	
R6027	ERJ6GMYJ221	M.RESISTOR CH 1/10W 220	1	
R6028	ERJ6GMYJ224	M.RESISTOR CH 1/10W 220K	1	
R6029	ERJ6GMYJ104	M.RESISTOR CH 1/10W 100K	1	
R6030	ERJ6GMYJ221	M.RESISTOR CH 1/10W 220	1	
R6031	ERJ6GMYJ183	M.RESISTOR CH 1/10W 18K	1	
R6032,33	ERJ6GMYJ333	M.RESISTOR CH 1/10W 33K	2	
R6034	ERJ6GMYJ472	M.RESISTOR CH 1/10W 4.7K	1	
R6035,36	ERJ6GMYJ102	M.RESISTOR CH 1/10W 1K	2	
R6037	ERJ6GMYJ562	M.RESISTOR CH 1/10W 5.6K	1	
R6038	ERJ6GMYJ223	M.RESISTOR CH 1/10W 22K	1	
R6039	ERJ6GMYJ103	M.RESISTOR CH 1/10W 10K	1	
R6043	ERJ6GMYJ683	M.RESISTOR CH 1/10W 68K	1	
R6044	ERJ6GMYJ103	M.RESISTOR CH 1/10W 10K	1	
R6045,46	ERJ6GMYJ102	M.RESISTOR CH 1/10W 1K	2	
R6050,51	ERJ6GMYJ272	M.RESISTOR CH 1/10W 2.7K	2	
R6052,53	ERJ6GMYJ103	M.RESISTOR CH 1/10W 10K	2	
R6054	ERJ6GMYJ102	M.RESISTOR CH 1/10W 1K	1	
R6055,56	ERJ6GMYJ101	M.RESISTOR 1/10W 100	2	
R6057	ERJ6GMYJ472	M.RESISTOR CH 1/10W 4.7K	1	
R6078	VRE0034E103	M.RESISTOR CH 1/10W 10K	1	
R6079	ERJ6GMYJ564	M.RESISTOR CH 1/10W 560K	1	
R6080	VRE0034E103	M.RESISTOR CH 1/10W 10K	1	
R6081	VRE0034E472	M.RESISTOR CH 1/10W 4.7K	1	
R6082	VRE0034E512	M.RESISTOR CH 1/10W 5.1K	1	
R7001	ERJ6GMYJ103	M.RESISTOR CH 1/10W 10K	1	
R7002	ERJ6GMYJ181	M.RESISTOR CH 1/10W 180	1	
R7004,05	ERJ6GMYJ151	M.RESISTOR CH 1/10W 150	2	
R7006,07	ERJ6GMYJ332	M.RESISTOR CH 1/10W 3.3K	2	
R7009,10	ERJ6GMYJ332	M.RESISTOR CH 1/10W 3.3K	2	
R7011	ERJ6GMYJ102	M.RESISTOR CH 1/10W 1K	1	
R7013,14	ERJ6GMYJ332	M.RESISTOR CH 1/10W 3.3K	2	
R7015,16	ERJ6GMYJ221	M.RESISTOR CH 1/10W 220	2	
R7018,19	ERJ6GMYJ332	M.RESISTOR CH 1/10W 3.3K	2	
R7024-26	ERJ6GMYJ221	M.RESISTOR CH 1/10W 220	3	
R7034	ERJ6GMYJ101	M.RESISTOR 1/10W 100	1	
R7035	ERJ6GMZ0R00	M.RESISTOR CH 1/10W 0	1	
R7651	ERJ6GEYJ332	M.RESISTOR CH 1/10W 3.3K	1	
R7654	ERJ6GEYJ562	M.RESISTOR CH 1/10W 5.6K	1	
R7655	ERJ6GEYJ472	M.RESISTOR CH 1/10W 4.7K	1	
R7656	ERJ6GEYJ102	M.RESISTOR CH 1/10W 1K	1	
R7657	ERJ6GEYJ104	M.RESISTOR CH 1/10W 100K	1	
R7658	ERJ6GEYJ393	M.RESISTOR CH 1/10W 39K	1	
R7659	ERJ6GEYJ822	M.RESISTOR CH 1/10W 8.2K	1	
R7661	ERJ6GEYJ562	M.RESISTOR CH 1/10W 5.6K	1	
R7662	ERJ6GEYJ393	M.RESISTOR CH 1/10W 39K	1	
R7663	ERJ6GEYJ222	M.RESISTOR CH 1/10W 2.2K	1	
R7664	ERJ6GEYJ332	M.RESISTOR CH 1/10W 3.3K	1	
R7671,72	ERJ6GEYJ473	M.RESISTOR CH 1/10W 47K	2	
R7673	ERJ6GEYJ104	M.RESISTOR CH 1/10W 100K	1	
R7674	ERJ6GEYJ124	M.RESISTOR CH 1/10W 120K	1	
R7675	ERJ6GEYJ103	M.RESISTOR CH 1/10W 10K	1	
R7676	ERG1SJ152	M.RESISTOR 1W 1.5K	1	
R7677	ERDS2TJ103	C.RESISTOR 1/4W 10K	1	
R7678	ERJ6GEYJ223	M.RESISTOR CH 1/10W 22K	1	
R7679	ERDS2TJ100	C.RESISTOR 1/4W 10	1	
R7680	ERJ6GEYJ102	M.RESISTOR CH 1/10W 1K	1	
R7681,82	ERJ6GEYJ473	M.RESISTOR CH 1/10W 47K	2	
R7683	ERJ6GEYJ563	M.RESISTOR CH 1/10W 56K	1	
R7684	ERJ6GEYJ393	M.RESISTOR CH 1/10W 39K	1	

Ref.No.		Part No.	Part Name & Description	Pcs	Remarks
R7691		ERJ6GEYJ103	M.RESISTOR CH 1/10W 10K	1	
R7692		ERJ6GEYJ104	M.RESISTOR CH 1/10W 100K	1	
R7693		ERJ6GEYJ222	M.RESISTOR CH 1/10W 2.2K	1	
R7694		ERJ6GEYJ103	M.RESISTOR CH 1/10W 10K	1	
R7695		ERJ6GEYJ562	M.RESISTOR CH 1/10W 5.6K	1	
R7696		ERJ6GEYJ473	M.RESISTOR CH 1/10W 47K	1	
R7901		ERJ3GEYJ471	M.RESISTOR CH 1/16W 470	1	
R7902		ERJ3GEYJ821	M.RESISTOR CH 1/16W 820	1	
R7903		ERJ3GEYJ472	M.RESISTOR CH 1/16W 4.7K	1	
R7904		ERJ6GEYJ152	M.RESISTOR CH 1/10W 1.5K	1	
R7905		ERJ6GEYJ471	M.RESISTOR CH 1/10W 470	1	
R7906		ERJ6GEYJ150	M.RESISTOR CH 1/10W 15	1	
R7907		ERJ6GEYJ561	M.RESISTOR CH 1/10W 560	1	
R7908		ERJ6GEYJ152	M.RESISTOR CH 1/10W 1.5K	1	
R7909-11		ERJ6GEYJ331	M.RESISTOR CH 1/10W 330	3	
R7913-15		ERJ3GEYJ682	M.RESISTOR CH 1/16W 6.8K	3	
R7917		ERJ3GEYJ103	M.RESISTOR CH 1/16W 10K	1	
R7918-21		ERJ3GEYJ473	M.RESISTOR CH 1/16W 47K	4	
R7922		ERJ3GEYJ563	M.RESISTOR CH 1/16W 56K	1	
R7923		ERJ3GEYJ394	M.RESISTOR CH 1/16W 390K	1	
R7924-26		ERJ3GEYJ103	M.RESISTOR CH 1/16W 10K	3	
R7927		ERJ3GEYJ562	M.RESISTOR CH 1/16W 5.6K	1	
R7928		ERJ3GEYJ102	M.RESISTOR 1/16W 1K	1	
R7929		ERJ3GEYJ563	M.RESISTOR CH 1/16W 56K	1	
R7930		ERJ3GEYJ394	M.RESISTOR CH 1/16W 390K	1	
R7931-33		ERJ3GEYJ103	M.RESISTOR CH 1/16W 10K	3	
R7934		ERJ3GEYJ562	M.RESISTOR CH 1/16W 5.6K	1	
R7935		ERJ3GEYJ102	M.RESISTOR 1/16W 1K	1	
R7936		ERJ3GEYJ223	M.RESISTOR CH 1/16W 22K	1	
R7937		ERJ3GEYJ393	M.RESISTOR CH 1/16W 39K	1	
R7938		ERJ3GEYJ222	M.RESISTOR CH 1/16W 2.2K	1	
R7939		ERJ3GEYJ224	M.RESISTOR CH 1/16W 220K	1	
R7940		ERJ3GEYJ181	M.RESISTOR CH 1/16W 180	1	
R7941		ERJ3GEYJ681	M.RESISTOR CH 1/16W 680	1	
R7942		ERJ3GEYJ393	M.RESISTOR CH 1/16W 39K	1	
R7943		ERJ3GEYJ473	M.RESISTOR CH 1/16W 47K	1	
R7944		ERJ3GEYJ392	M.RESISTOR CH 1/16W 3.9K	1	
R7945		ERJ3GEYJ822	M.RESISTOR CH 1/16W 8.2K	1	
R7946,47		ERJ3GEYJ473	M.RESISTOR CH 1/16W 47K	2	
R7948		ERJ3GEYJ332	M.RESISTOR 1/16W 3.3K	1	
R7949		ERJ3GEYJ822	M.RESISTOR CH 1/16W 8.2K	1	
R7950		ERJ3GEYJ332	M.RESISTOR 1/16W 3.3K	1	
R7951		ERJ3GEYJ822	M.RESISTOR CH 1/16W 8.2K	1	
R7956		ERJ3GEYJ822	M.RESISTOR CH 1/16W 8.2K	1	
R7957		ERJ3GEYJ332	M.RESISTOR 1/16W 3.3K	1	
R7958,59		ERJ3GEYJ823	M.RESISTOR CH 1/16W 82K	2	
R7960,61		ERJ6GEYJ471	M.RESISTOR CH 1/10W 470	2	
R7962,63		ERJ3GEYJ101	M.RESISTOR CH 1/16W 100	2	
R7964		ERJ3GEYJ272	M.RESISTOR CH 1/16W 2.7K	1	
R7969-72		ERJ3GEYJ101	M.RESISTOR CH 1/16W 100	4	
R7973-77		ERJ3GEYJ103	M.RESISTOR CH 1/16W 10K	5	
R7978		ERJ3GEYJ104	M.RESISTOR CH 1/16W 100K	1	
R7979		ERJ3GEYJ152	M.RESISTOR 1/16W 1.5K	1	
R7980		ERJ3GEYJ104	M.RESISTOR CH 1/16W 100K	1	
R7981,82		ERJ3GEYJ102	M.RESISTOR 1/16W 1K	2	
R7983		ERJ3GEYJ103	M.RESISTOR CH 1/16W 10K	1	
R7985		ERJ3GEYJ181	M.RESISTOR CH 1/16W 180	1	
R7987		ERJ3GEYJ563	M.RESISTOR CH 1/16W 56K	1	
R7988		ERJ3GEYJ121	M.RESISTOR CH 1/16W 120	1	
R7989		ERDS2TJ623	C.RESISTOR 1/4W 62K	1	
R8001,02		ERJ6GMYJ223	M.RESISTOR CH 1/10W 22K	2	
R8003		ERJ6GMYJ222	M.RESISTOR CH 1/10W 2.2K	1	
			TRANSFORMERS		
T703		EIV5EC045A	TRANSFORMER	1	
T704		EIV5EC047A	TRANSFORMER	1	
T711		EIS5EC008A	TRANSFORMER	1	
T4001		EIQ7QF013Q	TRANSFORMER	1	
			VARIABLE RESISTORS		
VR701		EVNCBAA00B53	V.RESISTOR	1	
VR751		EVNCBAA00B53	V.RESISTOR	1	
VR801,02		EVTEASA00B13	V.RESISTOR	2	

Ref.No.		Part No.	Part Name & Description	Pcs	Remarks
VR803		EVNCBAA00B14	V.RESISTOR	1	
VR2001		EVNDXAA00B54	V.RESISTOR 50K	1	
VR2006		EVNDXAA00B15	V.RESISTOR 100K	1	
VR2011		EVNDXAA00B15	V.RESISTOR 100K	1	
VR2018,19		EVNDXAA00B15	V.RESISTOR 100K	2	
VR3001		EVNDXAA00B23	V.RESISTOR 2K	1	
VR3012,13		EVNDXAA00B52	V.RESISTOR 500	2	
VR4001		EVNDXAA00B25	V.RESISTOR 200K	1	
VR4501		EVMECSA00B53	V.RESISTOR	1	
VR4502		EVMEASA00B24	V.RESISTOR	1	
VR4507		EVMEASA00B24	V.RESISTOR	1	
VR4509		EVMECSA00BY3	V.RESISTOR	1	
VR4512		EVNCBAA00B52	V.RESISTOR	1	
VR4550		EVMECSA00BS3	V.RESISTOR	1	
VR4551,52		EVMEASA00B55	V.RESISTOR	2	
VR7660		EVNCBAA00B23	V.RESISTOR	1	
VR7901,02		EVNCBAA00B14	V.RESISTOR	2	
VR7903		EVTEASA00B55	V.RESISTOR	1	
VR8001		EVNDXAA00B23	V.RESISTOR 2K	1	
			CRYSTAL OSCILLATORS		
X710		EFCH39MGQ1	CRYSTAL OSCILLATOR	1	
X711		EFCS6M65MW3B	CRYSTAL OSCILLATOR	1	
X712		EFCS6ROMS5	CRYSTAL OSCILLATOR	1	
X801		VSX0162	CRYSTAL OSCILLATOR	1	
X6001		VSX0409	CRYSTAL OSCILLATOR	1	
X7001		VSQ0565	CRYSTAL OSCILLATOR	1	
X7901		VSX0513	CRYSTAL OSCILLATOR	1	
X7902		VSX0512	CRYSTAL OSCILLATOR	1	
X7903		EFCA6004BF	CRYSTAL OSCILLATOR	1	
			MISCELLANEOUS		
		VEE8276	WIRE CABLE	1	(P4011-P7702)
		VEE8356	WIRE CABLE	1	(P6005-P6501,P4013)
		VEE8278	WIRE CABLE	1	(P2002-P1506)
		VEE8279	WIRE CABLE	1	(P2001-P2902)
		VEE8280	WIRE CABLE	1	(P4002-P1509)
		VEE8451	WIRE CABLE	1	(P1001,3-P1102)
		VWJ0682	FLAT CARD CABLE	1	(P3001-P501)
		VWJ0683A	FLAT CARD CABLE	1	(P2003-P1507)
		VWJ00B7A	FLAT CARD CABLE	1	(P6001-P1505)
		VWJ121W200BB	FLAT CARD CABLE	1	(P7401-P7501)
		VWJ240W160BB	FLAT CARD CABLE	1	(P7402-P7502)
		VJF1056	HARNESS LIFTER	1	
		VJF0004	WIRE SUDDLE	1	
		ENV87837H3R	TUNER	1	<!> FOR TV DEMODU.
		VSC3242	SHIELD COVER (MAIN)	1	FOR TV DEMODULATOR
		VSC3241	SHIELD COVER (TOP)	1	FOR TV DEMODULATOR
		VSC3553	SHIELD COVER (MAIN)	1	FOR NICAM DECODER
		VSC3554	SHIELD COVER (TOP)	1	FOR NICAM DECODER
		VSC3555	SHIELD COVER (BOTTOM)	1	FOR NICAM DECODER
	■	VEP03977J	MAIN C.B.A.		(RTL)NV-HD100ER
			CAPACITORS		
C305		ECUM1H470JCN	C.CAPACITOR CH 50V 47P	1	
C306,07		ECUM1H104ZFN	C.CAPACITOR CH 50V 0.1U	2	
C308		ECEA1EKN4R7	E.CAPACITOR 25V 4.7U	1	
C309		ECUM1H333KBN	C.CAPACITOR CH 50V 0.033U	1	
C310		ECEA1CK220	E.CAPACITOR 16V 22U	1	
C311		ECEA0JK101	E.CAPACITOR 6.3V 100U	1	
C312		ECUM1H104ZFN	C.CAPACITOR CH 50V 0.1U	1	
C313,14		ECUM1H103ZFN	C.CAPACITOR CH 50V 0.01U	2	
C315		ECUM1H560JCN	C.CAPACITOR CH 50V 56P	1	
C319		ECEA0JK101	E.CAPACITOR 6.3V 100U	1	

Ref.No.		Part No.	Part Name & Description	Pcs	Remarks
C320		ECUM1H820JCN	C.CAPACITOR CH 50V 82P	1	
C701,02		ECEA1EK4R7	E.CAPACITOR 25V 4.7U	2	
C707		ECEA1HK0R1	E.CAPACITOR 50V 0.1U	1	
C708		ECEA1CK100	E.CAPACITOR 16V 10U	1	
C710		ECUM1H103ZFN	C.CAPACITOR CH 50V 0.01U	1	
C719		ECUM1H103ZFN	C.CAPACITOR CH 50V 0.01U	1	
C720		ECUM1H104ZFN	C.CAPACITOR CH 50V 0.1U	1	
C721		ECQV1H823JZ	P.CAPACITOR 50V 0.082U	1	
C723		ECEA1CK100	E.CAPACITOR 16V 10U	1	
C725		ECQV1H104JZ	P.CAPACITOR 50V 0.1U	1	
C728		ECUM1H103ZFN	C.CAPACITOR CH 50V 0.01U	1	
C730		ECEA1CK100	E.CAPACITOR 16V 10U	1	
C731		VCEA1CAC100	E.CAPACITOR 16V 10U	1	
C732		ECEA1EK3R3	E.CAPACITOR 25V 3.3U	1	
C735		ECUM1H151JCN	C.CAPACITOR CH 50V 150P	1	
C736,37		ECUM1H103ZFN	C.CAPACITOR CH 50V 0.01U	2	
C739		ECUM1H101JCN	C.CAPACITOR CH 50V 100P	1	
C740		ECUM1H103ZFN	C.CAPACITOR CH 50V 0.01U	1	
C741		ECEA1HK010	E.CAPACITOR 50V 1U	1	
C742		ECEA1CK100	E.CAPACITOR 16V 10U	1	
C743		ECUM1H270JSN	C.CAPACITOR CH 50V 27P	1	
C744,45		ECEA1HK0R1	E.CAPACITOR 50V 0.1U	2	
C746		ECUM1H150JCN	C.CAPACITOR CH 50V 15P	1	
C747		ECUM1H680JPN	C.CAPACITOR CH 50V 68P	1	
C748		ECEA1CK470	E.CAPACITOR 16V 47U	1	
C749		ECEA1CK100	E.CAPACITOR 16V 10U	1	
C760		ECQV1H473JZ	P.CAPACITOR 50V 0.047U	1	
C781		ECUM1H120JCN	C.CAPACITOR CH 50V 12P	1	
C782		ECUM1H180JCN	C.CAPACITOR CH 50V 18P	1	
C790		ECUM1H103ZFN	C.CAPACITOR CH 50V 0.01U	1	
C792		ECUM1H220JCN	C.CAPACITOR CH 50V 22P	1	
C801		ECUM1H103ZFN	C.CAPACITOR CH 50V 0.01U	1	
C902		ECUM1H151JCN	C.CAPACITOR CH 50V 150P	1	
C803,04		ECUM1H103ZFN	C.CAPACITOR CH 50V 0.01U	2	
C805		ECEA0JK221	E.CAPACITOR 6.3V 220U	1	
C806		ECUM1H104ZFN	C.CAPACITOR CH 50V 0.1U	1	
C807		ECUM1H181JCN	C.CAPACITOR CH 50V 180P	1	
C808		ECUM1H270JCN	C.CAPACITOR CH 50V 27P	1	
C809		ECUM1H103ZFN	C.CAPACITOR CH 50V 0.01U	1	
C812		ECUM1H103ZFN	C.CAPACITOR CH 50V 0.01U	1	
C814		ECUM1H103ZFN	C.CAPACITOR CH 50V 0.01U	1	
C815		ECUM1H560JCN	C.CAPACITOR CH 50V 56P	1	
C816		ECUM1H103ZFN	C.CAPACITOR CH 50V 0.01U	1	
C817		ECUM1H560JCN	C.CAPACITOR CH 50V 56P	1	
C818		ECUM1H103ZFN	C.CAPACITOR CH 50V 0.01U	1	
C819		ECUM1H470JCN	C.CAPACITOR CH 50V 47P	1	
C820-25		ECUM1H103ZFN	C.CAPACITOR CH 50V 0.01U	6	
C826		ECEA0JK101	E.CAPACITOR 6.3V 100U	1	
C827		ECUM1H103ZFN	C.CAPACITOR CH 50V 0.01U	1	
C828		ECUM1H470JCN	C.CAPACITOR CH 50V 47P	1	
C829		ECUM1H103ZFN	C.CAPACITOR CH 50V 0.01U	1	
C830		ECEA1HK0R1	E.CAPACITOR 50V 0.1U	1	
C831		ECQB1H332JH	P.CAPACITOR 50V 0.27U	1	
C832		ECUM1H331JCN	C.CAPACITOR CH 50V 330P	1	
C838		ECUM1H104ZFN	C.CAPACITOR CH 50V 0.1U	1	
C839		ECUM1H100DCN	C.CAPACITOR CH 50V 10P	1	
C841		ECUM1H102KBN	C.CAPACITOR CH 50V 1000P	1	
C842		ECEA0JK101	E.CAPACITOR 6.3V 100U	1	
C843		ECUM1H104ZFN	C.CAPACITOR CH 50V 0.1U	1	
C845		ECEA1HK010	E.CAPACITOR 50V 1U	1	
C846		ECUM1H103ZFN	C.CAPACITOR CH 50V 0.01U	1	
C849		ECUM1H103ZFN	C.CAPACITOR CH 50V 0.01U	1	
C1001		ECA1EM101	E.CAPACITOR 25V 100U	1	
C1002		ECEA1CK330	E.CAPACITOR 16V 33U	1	
C1003		ECEA0JK330	E.CAPACITOR 6.3V 33U	1	
C1004		ECA0JM471	E.CPAACITOR 6.3V 470U	1	
C1005		ECEA1AP2221	E.CAPACITOR 10V 220U	1	
C2001-03		ECUM1H104ZFN	C.CAPACITOR CH 50V 0.1U	3	
C2004-06		ECEA1CK470	E.CAPACITOR 16V 47U	3	
C2007		ECEA1HK010	E.CAPACITOR 50V 1U	1	
C2008		ECA0JM221	E.CAPACITOR 6.3V 220U	1	
C2009		ECEA1HKR22	E.CAPACITOR 50V 0.22U	1	
C2010,11		ECUM1H333KBN	C.CAPACITOR 50V 0.033U	2	
C2012		ECUM1H103ZFN	C.CAPACITOR CH 50V 0.01U	1	
C2013		ECQV1H683JZ	P.CAPACITOR 50V 0.068U	1	

Ref.No.		Part No.	Part Name & Description	Pcs	Remarks
C2014		ECA1CM101	E.CAPACITOR 16V 100U	1	
C2015-18		ECUM1H333KBN	C.CAPACITOR 50V 0.033U	4	
C2019-21		ECEA1HK2R2	E.CAPACITOR 50V 2.2U	3	
C2027		ECUM1H222KBN	C.CAPACITOR CH 50V 2200P	1	
C2028		ECEA1CKA100	E.CAPACITOR 16V 10U	1	
C2029		ECEA1HK3R3	E.CAPACITOR 50V 3.3U	1	
C2030		ECEA1HKN3R3	E.CAPACITOR 50V 3.3U	1	
C2031		SCUM1H471JCN	C.CAPACITOR 50V 470P	1	
C2032		ECEA1CKA100	E.CAPACITOR 16V 10U	1	
C2033		ECEA1HK3R3	E.CAPACITOR 50V 3.3U	1	
C2034		SCEA0JK220	E.CAPACITOR 6.3V 22U	1	
C2035		ECUM1H103ZFN	C.CAPACITOR CH 50V 0.01U	1	
C2036		ECUM1H222KBN	C.CAPACITOR CH 50V 2200P	1	
C2037		ECA0JM221	E.CAPACITOR 6.3V 220U	1	
C2038		ECQV1H334JZ	P.CAPACITOR 50V 0.33U	1	
C2039		ECEA1HKNR47	E.CAPACITOR 50V 0.47U	1	
C2040		ECUM1H680JCN	C.CAPACITOR CH 50V 68P	1	
C2041,42		ECUM1C105ZFN	C.CAPACITOR 16V 1U	2	
C2043		ECUM1H392KBN	C.CAPACITOR CH 50V 3900P	1	
C2044		ECUM1H223KBN	C.CAPACITOR CH 50V 0.022U	1	
C2045		ECUM1H104ZFN	C.CAPACITOR CH 50V 0.1U	1	
C2046		ECUM1H680JCN	C.CAPACITOR CH 50V 68P	1	
C2047		ECEA1HKNR47	E.CAPACITOR 50V 0.47U	1	
C2048		ECA0JM221	E.CAPACITOR 6.3V 220U	1	
C2049		ECEA1HK4R7	E.CAPACITOR 50V 4.7U	1	
C2050		SCUM1H101JCN	C.CAPACITOR CH 50V 100P	1	
C2051		ECQV1H683JZ	P.CAPACITOR 50V 0.068U	1	
C2052		ECEA1HKR47	E.CAPACITOR 50V 0.47U	1	
C2053		ECEA1CK470	E.CAPACITOR 16V 47U	1	
C2055		ECEA0JK470	E.CAPACITOR 6.3V 47U	1	
C2056		ECUM1H104ZFN	C.CAPACITOR CH 50V 0.1U	1	
C3002,03		ECUM1H102KBN	C.CAPACITOR CH 50V 1000P	2	
C3004		ECEA0JK470	E.CAPACITOR 6.3V 47U	1	
C3008		ECUM1H103ZFN	C.CAPACITOR CH 50V 0.01U	1	
C3009		ECUM1C105ZFN	C.CAPACITOR 16V 1U	1	
C3011		ECUM1H104ZFN	C.CAPACITOR CH 50V 0.1U	1	
C3012		ECUM1H103ZFN	C.CAPACITOR CH 50V 0.01U	1	
C3013		ECEA0JK221	E.CAPACITOR 6.3V 220U	1	
C3014		ECUM1H560JCN	C.CAPACITOR CH 50V 56P	1	
C3015		ECUM1H080DCN	C.CAPACITOR CH 50V 8P	1	
C3016		ECUM1H180JCN	C.CAPACITOR CH 50V 18P	1	
C3018		ECUM1H181JCN	C.CAPACITOR CH 50V 180P	1	
C3020		ECUM1H151JCN	C.CAPACITOR CH 50V 150P	1	
C3021		ECUM1H220JCN	C.CAPACITOR CH 50V 22P	1	
C3023		ECUM1H330JCN	C.CAPACITOR CH 50V 33P	1	
C3024		ECUM1H681JCN	C.CAPACITOR CH 50V 680P	1	
C3027		ECUM1H220JCN	C.CAPACITOR CH 50V 22P	1	
C3028		ECUM1H680JCN	C.CAPACITOR CH 50V 68P	1	
C3030		ECUM1H181JCN	C.CAPACITOR CH 50V 180P	1	
C3031		ECUM1H103ZFN	C.CAPACITOR CH 50V 0.01U	1	
C3032		ECUM1H220JCN	C.CAPACITOR CH 50V 22P	1	
C3033		ECUM1H103ZFN	C.CAPACITOR CH 50V 0.01U	1	
C3034		ECEA1CKA100	E.CAPACITOR 16V 10U	1	
C3035		ECEA0JK470	E.CAPACITOR 6.3V 47U	1	
C3038		ECEA1CK470	E.CAPACITOR 16V 47U	1	
C3040		ECUM1H103ZFN	C.CAPACITOR CH 50V 0.01U	1	
C3043		ECUM1H104ZFN	C.CAPACITOR CH 50V 0.1U	1	
C3047		ECUM1H104ZFN	C.CAPACITOR CH 50V 0.1U	1	
C3048		ECUM1H103KBN	C.CAPACITOR CH 50V 0.01U	1	
C4001		ECA0JM471	E.CPAACITOR 6.3V 470U	1	
C4002,03		ECUM1H104ZFN	C.CAPACITOR CH 50V 0.1U	2	
C4004		ECEA1CP2101	E.CAPACITOR 16V 100U	1	
C4005		ECUM1C224ZFN	C.CAPACITOR CH 16V 0.22U	1	
C4006		ECEA1CK100	E.CAPACITOR 16V 10U	1	
C4007		ECEA1CP2101	E.CAPACITOR 16V 100U	1	
C4008		ECUM1C224ZFN	C.CAPACITOR CH 16V 0.22U	1	
C4009		ECEA1CK100	E.CAPACITOR 16V 10U	1	
C4010		ECEA1CK470	E.CAPACITOR 16V 47U	1	
C4011		ECUM1H103ZFN	C.CAPACITOR CH 50V 0.01U	1	
C4012		ECQB1H103KZ	P.CAPACITOR 50V 0.01U	1	
C4013		ECQP1222JZ	P.CAPACITOR 0.0022U	1	
C4014		ECKD2H331KB	C.CAPACITOR 500V 330P	1	
C4015		ECQB1H102KZ	P.CAPACITOR 50V 1000P	1	
C4016		ECEA16M33	E.CAPACITOR 16V 33U	1	
C4020		ECUM1H221JCN	C.CAPACITOR CH 50V 220P	1	

Ref.No.		Part No.	Part Name & Description	Pcs	Remarks
C4021		ECUM1H683ZFN	C.CAPACITOR CH 50V 0.068U	1	
C4022		ECUM1H103ZFN	C.CAPACITOR CH 50V 0.01U	1	
C4023		ECUM1H471JCN	C.CAPACITOR 50V 470P	1	
C4025		ECEA1HK010	E.CAPACITOR 50V 1U	1	
C4026		ECUM1H680JCN	C.CAPACITOR CH 50V 68P	1	
C4027		ECEA0JK220	E.CAPACITOR 6.3V 22U	1	
C4502		ECUM1C104ZFN	C.CAPACITOR CH 16V 0.1U	1	
C4503		ECUX1H152KBV	C.CAPACITOR CH 50V 1500P	1	
C4504,05		ECEA1CP2470	E.CAPACITOR 16V 47U	2	
C4506		VCEA1CAH100	E.CAPACITOR 16V 10U	1	
C4507		ECQB1H223JA	P.CAPACITOR 50V 0.022U	1	
C4508		ECEA1EB24R7	E.CAPACITOR 25V 4.7U	1	
C4509		ECEA1AP2470	E.CAPACITOR 10V 47U	1	
C4510		ECQB1H103JA	P.CAPACITOR 50V 0.01U	1	
C4511		ECQB1H332JA	P.CAPACITOR 50V 3300P	1	
C4512		ECUX1H561JV	C.CAPACITOR CH 50V 560P	1	
C4513		ECUM1H681JN	C.CAPACITOR CH 50V 680P	1	
C4514		ECUM1H561JN	C.CAPACITOR CH 50V 560P	1	
C4515		VCEA1EAH4R7	E.CAPACITOR 25V 4.7U	1	
C4517		ECEA1AP2101	E.CAPACITOR 10V 100U	1	
C4518		ECUM1H1042FN	C.CAPACITOR CH 50V 0.1U	1	
C4521		ECUM1C473KBV	C.CAPACITOR CH 16V 0.047U	1	
C4522		VCEA1HAH3R3	E.CAPACITOR 50V 3.3U	1	
C4528		ECUM1H1042FN	C.CAPACITOR CH 50V 0.1U	1	
C4530		ECEA0JPK470	E.CAPACITOR 6.3V 47U	1	
C4533		ECEA1CP2330	E.CAPACITOR 16V 33U	1	
C4537		ECUM1H102JCN	C.CAPACITOR CH 50V 1000P	1	
C4538		ECEA1HUR47	E.CAPACITOR 50V 0.47U	1	
C4539		ECUM1C224ZFN	C.CAPACITOR CH 16V 0.22U	1	
C4541		ECUM1H1042FN	C.CAPACITOR CH 50V 0.1U	1	
C4545		ECUM1H102KBN	C.CAPACITOR CH 50V 1000P	1	
C4552		ECUM1C1042FN	C.CAPACITOR CH 16V 0.1U	1	
C4556		VCEA1CAH100	E.CAPACITOR 16V 10U	1	
C4557		ECQB1H223JA	P.CAPACITOR 50V 0.022U	1	
C4558		ECEA1EB24R7	E.CAPACITOR 25V 4.7U	1	
C4559		ECEA1AP2470	E.CAPACITOR 10V 47U	1	
C4560		ECQB1H103JA	P.CAPACITOR 50V 0.01U	1	
C4561		ECQB1H332JA	P.CAPACITOR 50V 3300P	1	
C4562		ECUM1H561JN	C.CAPACITOR CH 50V 560P	1	
C4563		ECUM1H681JN	C.CAPACITOR CH 50V 680P	1	
C4564		ECUM1H561JN	C.CAPACITOR CH 50V 560P	1	
C4565		VCEA1EAH4R7	E.CAPACITOR 25V 4.7U	1	
C4567		ECEA1AP2101	E.CAPACITOR 10V 100U	1	
C4568		ECUM1H1042FN	C.CAPACITOR CH 50V 0.1U	1	
C4572		VCEA1HAH3R3	E.CAPACITOR 50V 3.3U	1	
C4576		ECUM1E473KBN	C.CAPACITOR CH 25V 0.047U	1	
C4583		ECEA1CP2330	E.CAPACITOR 16V 33U	1	
C4585,86		ECEA1AP2101	E.CAPACITOR 10V 100U	2	
C4591		ECUM1H1042FN	C.CAPACITOR CH 50V 0.1U	1	
C4592		ECUX1H152KBV	C.CAPACITOR CH 50V 1500P	1	
C4604		ECUM1H182JN	C.CAPACITOR CH 50V 1800P	1	
C4606		VCEA0JAC470	E.CAPACITOR 6.3V 47U	1	
C4611		ECQB1H103JH	P.CAPACITOR 50V 0.01U	1	
C4613		ECUM1H471JCN	C.CAPACITOR 50V 470P	1	
C4616		ECUX1H102ZFV	C.CAPACITOR CH 50V 1000P	1	
C4617		ECEA10M22	E.CAPACITOR 10V 22U	1	
C4618		ECQB1H822JH	P.CAPACITOR 50V 8200P	1	
C4619		ECEA1APB100	E.CAPACITOR 10V 10U	1	
C4621		ECEA0JPK101	E.CAPACITOR 6.3V 100U	1	
C4629		ECQB1H103J2	P.CAPACITOR 50V 0.01U	1	
C4636		ECUM1H471JN	C.CAPACITOR CH 50V 470P	1	
C4638		ECQB1H822JH	P.CAPACITOR 50V 8200P	1	
C4651		ECQB1H333JA	P.CAPACITOR 50V 0.033U	1	
C4652,53		ECUM1C1052FN	C.CAPACITOR 16V 1U	2	
C5001		ECUM1H1032FN	C.CAPACITOR CH 50V 0.01U	1	
C5002		ECUM1H221JCN	C.CAPACITOR CH 50V 220P	1	
C5003		ECUM1H223KBN	C.CAPACITOR CH 50V 0.022U	1	
C5004		ECUM1H472KBN	C.CAPACITOR CH 50V 4700P	1	
C5005		ECUM1H392KBN	C.CAPACITOR CH 50V 3900P	1	
C5006		ECUM1H332KBN	C.CAPACITOR CH 50V 3300P	1	
C5007		ECEA0JK220	E.CAPACITOR 6.3V 22U	1	
C5008		ECUM1H180JCN	C.CAPACITOR CH 50V 18P	1	
C5009		ECUM1H220JCN	C.CAPACITOR CH 50V 22P	1	
C5010		ECUM1H1032FN	C.CAPACITOR CH 50V 0.01U	1	
C5011		ECEA0JK220	E.CAPACITOR 6.3V 22U	1	

Ref.No.		Part No.	Part Name & Description	Pcs	Remarks
C6012		ECUM1H1042FN	C.CAPACITOR CH 50V 0.1U	1	
C6013		ECUM1H103ZFN	C.CAPACITOR CH 50V 0.01U	1	
C6014,15		ECUM1H271JCN	C.CAPACITOR CH 50V 270P	2	
C6016,17		ECUM1H103ZFN	C.CAPACITOR CH 50V 0.01U	2	
C6018		ECEA1CKA100	E.CAPACITOR 16V 10U	1	
C6019		ECEA0JK330	E.CAPACITOR 6.3V 33U	1	
C6020		ECUM1H103ZFN	C.CAPACITOR CH 50V 0.01U	1	
C6021		ECUM1H104ZFN	C.CAPACITOR CH 50V 0.1U	1	
C7003-05		ECUM1H103ZFN	C.CAPACITOR CH 50V 0.01U	3	
C7006		ECEA1CK100	E.CAPACITOR 16V 10U	1	
C7007,08		ECUM1H103ZFN	C.CAPACITOR CH 50V 0.01U	2	
C7009		ECEA0JK470	E.CAPACITOR 6.3V 47U	1	
C7010		ECEA0JK101	E.CAPACITOR 6.3V 100U	1	
C7011		EECS5R5T224N	E.CAPACITOR 5.5V 0.22U	1	
C7012		ECUM1H103ZFN	C.CAPACITOR CH 50V 0.01U	1	
C7013		ECEA0JK221	E.CAPACITOR 6.3V 220U	1	
C7018-20		ECUM1H104ZFN	C.CAPACITOR CH 50V 0.1U	3	
C7023		ECUM1H104ZFN	C.CAPACITOR CH 50V 0.1U	1	
C7651		ECEA1CKN100	E.CAPACITOR 16V 10U	1	
C7653		ECQB1H332JH	P.CAPACITOR 50V 0.27U	1	
C7668		ECUM1H103ZFN	C.CAPACITOR CH 50V 0.01U	1	
C7685		ECEA1HK010	E.CAPACITOR 50V 1U	1	
C7901-03		ECUX1H103ZFV	C.CAPACITOR CH 50V 0.01U	3	
C7904		ECEA1CK470	E.CAPACITOR 16V 47U	1	
C7905		ECUX1H103ZFV	C.CAPACITOR CH 50V 0.01U	1	
C7906		ECEA1CK470	E.CAPACITOR 16V 47U	1	
C7907		ECUX1H103ZFV	C.CAPACITOR CH 50V 0.01U	1	
C7908		ECQV1H104JZ	P.CAPACITOR 50V 0.1U	1	
C7909		ECUX1H103ZFV	C.CAPACITOR CH 50V 0.01U	1	
C7910		ECEA1CK100	E.CAPACITOR 16V 10U	1	
C7911-13		ECUX1H103ZFV	C.CAPACITOR CH 50V 0.01U	3	
C7914		ECEA0JK470	E.CAPACITOR 6.3V 47U	1	
C7915		ECUX1H100DCV	C.CAPACITOR 50V 10P	1	
C7916		ECUX1H103ZFV	C.CAPACITOR CH 50V 0.01U	1	
C7917		ECEA0JK470	E.CAPACITOR 6.3V 47U	1	
C7918		ECUX1H103ZFV	C.CAPACITOR CH 50V 0.01U	1	
C7919		ECEA0JK470	E.CAPACITOR 6.3V 47U	1	
C7920		ECEA1CK100	E.CAPACITOR 16V 10U	1	
C7921		ECQB1H102JH	P.CAPACITOR 50V 1000P	1	
C7922		ECQB1H272JH	P.CAPACITOR 50V 2700P	1	
C7923		ECUX1H151JCV	C.CAPACITOR CH 50V 150P	1	
C7924		ECEA1CKN100	E.CAPACITOR 16V 10U	1	
C7925		ECUX1H561JCV	C.CAPACITOR 50V 560P	1	
C7926		ECEA1CK100	E.CAPACITOR 16V 10U	1	
C7927		ECQB1H102JH	P.CAPACITOR 50V 1000P	1	
C7928		ECQB1H272JH	P.CAPACITOR 50V 2700P	1	
C7929		ECUX1H151JCV	C.CAPACITOR CH 50V 150P	1	
C7930		ECEA1CKN100	E.CAPACITOR 16V 10U	1	
C7931		ECUX1H561JCV	C.CAPACITOR 50V 560P	1	
C7932,33		ECEA1CKN100	E.CAPACITOR 16V 10U	2	
C7934		ECUX1H220JCV	C.CAPACITOR CH 50V 22P	1	
C7935		ECUX1H470JCV	C.CAPACITOR 50V 47P	1	
C7937		ECUX1H103ZFV	C.CAPACITOR CH 50V 0.01U	1	
C7938		ECEA1HKR47	E.CAPACITOR 50V 0.47U	1	
C7939,40		ECEA1HKNOR1	E.CAPACITOR 50V 0.1U	2	
C7941		ECEA1HKR47	E.CAPACITOR 50V 0.47U	1	
C7942		ECUX1H103ZFV	C.CAPACITOR CH 50V 0.01U	1	
C7943		ECUX1H100DCV	C.CAPACITOR 50V 10P	1	
C7945		ECUX1H101JCV	C.CAPACITOR CH 50V 100P	1	
C7946		ECUX1H220JCV	C.CAPACITOR CH 50V 22P	1	
C7947		ECEA1HKR47	E.CAPACITOR 50V 0.47U	1	
C7948		ECUX1H103ZFV	C.CAPACITOR CH 50V 0.01U	1	
C7949		ECEA0JK330	E.CAPACITOR 6.3V 33U	1	
C7950-53		ECEA1CKN100	E.CAPACITOR 16V 10U	4	
C7954		ECEA1CK470	E.CAPACITOR 16V 47U	1	
C7955-58		ECEA1CK100	E.CAPACITOR 16V 10U	4	
C7960		ECEA1CK100	E.CAPACITOR 16V 10U	1	
C7961		ECUX1H103ZFV	C.CAPACITOR CH 50V 0.01U	1	
C7963		ECUX1H103ZFV	C.CAPACITOR CH 50V 0.01U	1	
C7964		ECEA1CK100	E.CAPACITOR 16V 10U	1	
C7965,66		ECUX1H103ZFV	C.CAPACITOR CH 50V 0.01U	2	
C7967		ECEA1CK100	E.CAPACITOR 16V 10U	1	
C8001		ECUM1H1042FN	C.CAPACITOR CH 50V 0.1U	1	

Ref.No.		Part No.	Part Name & Description	Pcs	Remarks
			DIODES		
D302		1SS283	DIODE	1	
D303		MA151A	DIODE	1	
D304		1SS254	DIODE	1	
D710		MA3100L	DIODE	1	
D771		MA151WK	DIODE	1	
D772		1SS254	DIODE	1	
D801,02		1SS254	DIODE	2	
D804		1SS254	DIODE	1	
D1001-03		11ES1	DIODE	3	
D1004		MA723VT	DIODE	1	(VT)
D2001		MA723VT	DIODE	1	(VT)
D2005-08		1SS254	DIODE	4	
D3001		1SS254	DIODE	1	
D3002		11EQS04	DIODE	1	
D3007		1SS254	DIODE	1	
D3008		MA221	DIODE	1	
D4001,02		1SS254	DIODE	2	
D4003		MA151WK	DIODE	1	
D4501,02		MA151H	DIODE	2	
D4503		MA151K	DIODE	1	
D4504		MA151H	DIODE	1	
D4602		MA151K	DIODE	1	
D6001-05		1SS254	DIODE	5	
D6007		1SS254	DIODE	1	
D6008,09		MA723VT	DIODE	2	(VT)
D6011		1SS254	DIODE	1	
D6012		SV03YS	DIODE	1	
D7001-04		MA723VT	DIODE	4	(VT)
D7005		1SS254	DIODE	1	
D7007		1SS254	DIODE	1	
D7009		MA151WK	DIODE	1	
D7011		MA151WK	DIODE	1	
D7672,73		MA3150-H	DIODE	2	
D7901,02		MA141WK	DIODE	2	
D7904		MA141K	DIODE	1	
D7905		MA141WA	DIODE	1	
D7906		MA141WK	DIODE	1	
D7907		MA141K	DIODE	1	
			DELAYS		
DL801		VLD0198	DELAY	1	
DL802		EFDUN124A13N	DELAY	1	
			FILTERS		
FL4501		VLF0947M	FILTER	1	
FL7901		VLF0703	FILTER	1	
FL7902		ELKAW103EB	FILTER	1	
FL7903		ELKAW101GB	COIL 100UH	1	
FL7904,05		ELKAW103EB	FILTER	2	
FL7907-11		ELKAW103EB	FILTER	5	
FL7914,15		ELKAW101GB	COIL 100UH	2	
FL7916		VLF0633	FILTER	1	
			INTEGRATED CIRCUITS		
IC301		VEFH29D	IC	1	
IC701		M52014SP	IC	1	
IC802		M52352FP	IC	1	
IC2001		BA6219B	IC	1	
IC2002		AN3727S	IC	1	
IC2003		XRA6439P	IC	1	
IC2005		UPC358G2	IC	1	
IC4501		XLH7770KS	IC	1	
IC4601		BA7755AF	IC	1	
IC6001		MN67434VRSA	IC	1	
IC6009		UPC358G2	IC	1	
IC7001		M66006FP	IC	1	
IC7901		TB1204F	IC	1	
IC7902		TA2009F	IC	1	
IC7903		M5238FP	IC	1	

Ref.No.		Part No.	Part Name & Description	Pcs	Remarks
			COILS		
L303		ELESQ220KA	COIL 22UH	1	
L304		ELESQ101KA	COIL 100UH	1	
L305		ELESP121JA	COIL 120UH	1	
L306		ELESQ390KA	COIL 39UH	1	
L701		ELESQ680KA	COIL 68UH	1	
L711		ELQTR22XB	COIL 0.22UH	1	
L718,19		ELESQ680KA	COIL 68UH	2	
L720		ELESQ150KA	COIL 15UH	1	
L781		VLQ0213K680	COIL 68UH	1	
L801,02		VLQ0540J150	COIL 15UH	2	
L803		ELESQ220KA	COIL 22UH	1	
L804		ELESQ101KA	COIL 100UH	1	
L805		ELESQ270KA	COIL 27UH	1	
L807,08		VLQ0540J150	COIL 15UH	2	
L809		ELESQ101KA	COIL 100UH	1	
L811,12		ELESQ101KA	COIL 100UH	2	
L1001		VLP0074	COIL	1	
L2001		VLP0083	FILTER	1	
L2002		VLQ0188J330	COIL 33UH	1	
L2003		ELESQ102KA	COIL 1000UH	1	
L2004		ELESQ101KA	COIL 100UH	1	
L2005		VLP0074	COIL	1	
L2006		VLQ0188J330	COIL 33UH	1	
L3004		VLQ0188J330	COIL 33UH	1	
L3005		ELESQ270JA	COIL 27UH	1	
L3007		ELESQ6R8JA	COIL 6.8UH	1	
L3008		ELESQ5R6JA	COIL 5.6UH	1	
L3009		ELESQ120JA	COIL 12UH	1	
L3010		ELESQ101JA	COIL 100UH	1	
L3011		VLQ0188J330	COIL 33UH	1	
L3012		ELESQ151KA	COIL 150UH	1	
L3013		ELESQ820JA	COIL 82UH	1	
L4001,02		VLQEL06F101K	COIL 100UH	2	
L4003		ELESQ471KA	COIL 470UH	1	
L4004		VLQ0188J330	COIL 33UH	1	
L4501,02		ELESQ101KA	COIL 100UH	2	
L4601		VLQEL07F153J	COIL 15MH	1	
L5001		VLP0074	COIL	1	
L7001,02		ELESQ1R0KA	COIL 1UH	2	
L7003,04		VLQ0540J330	COIL 33UH	2	
L7006		VLQ0188K330	COIL 33UH	1	
L7007		VLQ0540J330	COIL 33UH	1	
L7008		ELESQ1R0KA	COIL 1UH	1	
L7010		VLQEL06F101K	COIL 100UH	1	
L7012		ERJ6GM20R00	M.RESISTOR CH 1/10W 0	1	
L7901,02		VLP0083	FILTER	2	
			CONNECTORS		
P1001		VJP1144	CONNECTOR (MALE) 5P	1	
P1001		VJS1144	CONNECTOR (FEMALE) 6P	1	
P1002		VJP1141	CONNECTOR (MALE) 2P	1	
P1003		VJP1232T	CONNECTOR (MALE) 5P	1	
P1003		VJS1232	CONNECTOR (FEMALE) 5P	1	
P1102		VJS1237T	CONNECTOR (FEMALE)	1	
P1506		VJS1736	CONNECTOR (FEMALE) 3P	1	
P1509		VJS1141	CONNECTOR (FEMALE)	1	
P2001		VJP1232T	CONNECTOR (MALE) 5P	1	
P2001		VJS1738	CONNECTOR (FEMALE)	1	
P2002		VJP1230T	CONNECTOR (MALE) 3P	1	
P2002		VJS1736	CONNECTOR (FEMALE) 3P	1	
P2003		VJS3193A015A	CONNECTOR (FEMALE)	1	
P2902		VJS1738	CONNECTOR (FEMALE)	1	
P3001		VJS3193A020A	CONNECTOR (FEMALE)	1	
P4002		VJP1230T	CONNECTOR (MALE) 3P	1	
P4002		VJS1230	CONNECTOR (FEMALE) 3P	1	
P4003		VJS2331	CONNECTOR (FEMALE)	1	
P4011		VJP1231T	CONNECTOR (MALE) 4P	1	
P4011		VJS1737	CONNECTOR (FEMALE)	1	
P4013		VJP1230T	CONNECTOR (MALE) 3P	1	
P5001		VJS3193A013A	CONNECTOR (FEMALE)	1	
P5005		VJP1236T	CONNECTOR (MALE) 9P	1	
P5005		VJS1239	CONNECTOR (FEMALE) 12P	1	
P6501		VJS1239	CONNECTOR (FEMALE) 12P	1	

Ref.No.	Part No.	Part Name & Description	Pcs	Remarks
P7401	VJS3193A012A	CONNECTOR (FEMALE)	1	
P7402	VJS3193A024A	CONNECTOR (FEMALE)	1	
P7702	VJS1737	CONNECTOR (FEMALE)	1	
PK7901,02	VJR0477	PACK PIN	2	
PP3001	VJP3044G009W	CONNECTOR (MALE)	1	
PP3002	VJP3044G012W	CONNECTOR (MALE)	1	
PP3003	VJP3044G006W	CONNECTOR (MALE)	1	
PP3005	VJP3042A016W	CONNECTOR (MALE)	1	
PP3006	VJP3042A017W	CONNECTOR (MALE)	1	
PP4001-03	VJP3186A018	CONNECTOR (MALE)	3	
PP7401-03	VJP3043A005W	CONNECTOR (MALE) 5P	3	
PP7404	VJP3043A006W	CONNECTOR (MALE) 6P	1	
PP7405	VJP3043A004W	CONNECTOR (MALE) 4P	1	
PP7406	VJP3043A010W	CONNECTOR (MALE)	1	
PS301	VJS3044F009W	CONNECTOR (FEMALE)	1	
PS302	VJS3044F012W	CONNECTOR (FEMALE)	1	
PS303	VJS3044F006W	CONNECTOR (FEMALE)	1	
PS701-03	VJS3043B005W	CONNECTOR (FEMALE) 5P	3	
PS704	VJS3043B006W	CONNECTOR (FEMALE) 6P	1	
PS4001-03	VJS3186B01B	CONNECTOR (FEMALE)	3	
		TRANSISTORS		
Q703	MSD601-S	TRANSISTOR	1	
Q711	MSB709-R	TRANSISTOR	1	
Q712	2SD1996-R	TRANSISTOR	1	
Q713	2SD1328-S	TRANSISTOR	1	
Q714	MSD601-S	TRANSISTOR	1	
Q771	MSD601	TRANSISTOR-RESISTOR	1	
Q801	MSC2295	TRANSISTOR	1	
Q802	MSD601	TRANSISTOR-RESISTOR	1	
Q808	MSB709	TRANSISTOR	1	
Q2001	MSB709	TRANSISTOR	1	
Q3001	MSB709	TRANSISTOR	1	
Q3002	MSC2295	TRANSISTOR	1	
Q3003	MSB709	TRANSISTOR	1	
Q3004	MSC2295	TRANSISTOR	1	
Q3007	MSD601	TRANSISTOR-RESISTOR	1	
Q3009	MSD601	TRANSISTOR-RESISTOR	1	
Q3010	2SB710-R	TRANSISTOR	1	(R,S)
Q4001	2SB710-R	TRANSISTOR	1	(R,S)
Q4002	2SB1321-R	TRANSISTOR	1	(R,S)
Q4003	2SD602A-R	TRANSISTOR	1	
Q4004,05	MSD601	TRANSISTOR-RESISTOR	2	
Q4006	MSB709	TRANSISTOR	1	
Q4007	2SB1378-R	TRANSISTOR	1	
Q4008	2SB1321-R	TRANSISTOR	1	(R,S)
Q4009	MSD601	TRANSISTOR-RESISTOR	1	
Q4501	2SD655	TRANSISTOR	1	
Q4551	2SB561	TRANSISTOR	1	
Q4601	MSD1328	TRANSISTOR	1	
Q6001	MSD601	TRANSISTOR-RESISTOR	1	
Q6002	2SD1991A	TRANSISTOR	1	
Q6003	MSB709	TRANSISTOR	1	
Q6004	2SD655	TRANSISTOR	1	
Q6005	MSD601	TRANSISTOR-RESISTOR	1	
Q6006	MSB709	TRANSISTOR	1	
Q7901,02	MSD601	TRANSISTOR-RESISTOR	2	
Q7903	2SC3931CD	TRANSISTOR	1	
Q7904-07	2SB1219	TRANSISTOR	4	
Q7908,09	2SC3929	TRANSISTOR	2	
Q7910	2SD1820	TRANSISTOR	1	
Q7913	2SB1218-Q	TRANSISTOR	1	
Q7914,15	2SD1979-S	TRANSISTOR	2	
Q7916	2SB1219	TRANSISTOR	1	
Q8001	MSD601	TRANSISTOR-RESISTOR	1	
		COMBINATION PARTS		

Ref.No.	Part No.	Part Name & Description	Pcs	Remarks
QR303	MRN2404	TRANSISTOR-RESISTOR	1	
QR306	MRN1404	TRANSISTOR-RESISTOR	1	
QR702	MRN1404	TRANSISTOR-RESISTOR	1	
QR703	MRN2403	TRANSISTOR-RESISTOR	1	
QR704	MRN1404	TRANSISTOR-RESISTOR	1	
QR711,12	MRN1403	TRANSISTOR-RESISTOR	2	
QR714	MRN1404	TRANSISTOR-RESISTOR	1	
QR804	MRN2404	TRANSISTOR-RESISTOR	1	
QR805	MRN1404	TRANSISTOR-RESISTOR	1	
QR1001	XN1211	TRANSISTOR-RESISTOR	1	
QR2001	XN1213	TRANSISTOR-TRANSISTOR	1	
QR2002	MRN2404	TRANSISTOR-RESISTOR	1	
QR3001	MRN2402	TRANSISTOR-RESISTOR	1	
QR3002	DTC363EK	COMBI.TR-R	1	
QR3006	MRN2402	TRANSISTOR-RESISTOR	1	
QR3007	DTC363EK	COMBI.TR-R	1	
QR4001	DTC363EK	COMBI.TR-R	1	
QR4002	XN1111	TRANSISTOR-RESISTOR	1	
QR4005	MRN1403	TRANSISTOR-RESISTOR	1	
QR4006	DTC363EK	COMBI.TR-R	1	
QR4007	MRN1404	TRANSISTOR-RESISTOR	1	
QR4508,09	MRN2404	TRANSISTOR-RESISTOR	2	
QR4510	MRN1403	TRANSISTOR-RESISTOR	1	
QR4602	MRN2402	TRANSISTOR-RESISTOR	1	
QR4603	MRN1404	TRANSISTOR-RESISTOR	1	
QR6003	XN1211	TRANSISTOR-RESISTOR	1	
QR6004	UN2114	TRANSISTOR-RESISTOR	1	
QR6005	MRN1404	TRANSISTOR-RESISTOR	1	
QR6007	XN1213	TRANSISTOR-TRANSISTOR	1	
QR6010,11	MRN1404	TRANSISTOR-RESISTOR	2	
QR7001	MRN1402	TRANSISTOR-RESISTOR	1	
QR7005	MRN1403	TRANSISTOR-RESISTOR	1	
QR7006	MRN2402	TRANSISTOR-RESISTOR	1	
QR7901,02	UN5213	TRANSISTOR	2	
QR7903	UN5112	TRANSISTOR-RESISTOR	1	
QR7904	UN5214	TRANSISTOR-RESISTOR	1	
QR7905,06	UN5213	TRANSISTOR	2	
		RESISTORS		
R304	ERJ6GMZOR00	M.RESISTOR CH 1/10W 0	1	
R307	ERJ6GEYJ472	M.RESISTOR CH 1/10W 4.7K	1	
R308	ERJ6GMYJ472	M.RESISTOR CH 1/10W 4.7K	1	
R310	ERJ6GMYJ272	M.RESISTOR CH 1/10W 2.7K	1	
R312	ERJ6GMYJ473	M.RESISTOR CH 1/10W 47K	1	
R315	ERJ6GMYJ393	M.RESISTOR CH 1/10W 39K	1	
R316	ERJ6GMYJ392	M.RESISTOR CH 1/10W 3.9K	1	
R318,19	ERJ6GMYJ103	M.RESISTOR CH 1/10W 10K	2	
R322	ERJ6GMYJ332	M.RESISTOR CH 1/10W 3.3K	1	
R327	ERJ6GEYK125	M.RESISTOR CH 1/10W 1.2M	1	
R716	ERJ6GEYJ152	M.RESISTOR CH 1/10W 1.5K	1	
R719	ERJ6GEYJ105	M.RESISTOR CH 1/10W 1M	1	
R720	ERJ6GEYJ682	M.RESISTOR CH 1/10W 6.8K	1	
R721,22	ERJ6GEYJ471	M.RESISTOR CH 1/10W 470	2	
R724	ERJ6GEYJ822	M.RESISTOR CH 1/10W 8.2K	1	
R725	ERJ6GEYJ222	M.RESISTOR CH 1/10W 2.2K	1	
R727	ERJ6GEYJ101	M.RESISTOR CH 1/10W 100	1	
R728	ERDS2TJ102	C.RESISTOR 1/4W 1K	1	
R729	ERJ6GEYJ681	M.RESISTOR CH 1/10W 680	1	
R730	ERJ6GEYJ152	M.RESISTOR CH 1/10W 1.5K	1	
R736	ERJ6GEYJ471	M.RESISTOR CH 1/10W 470	1	
R737	ERJ6GEYJ102	M.RESISTOR CH 1/10W 1K	1	
R738	ERJ6GEYJ562	M.RESISTOR CH 1/10W 5.6K	1	
R739	ERJ6GEYJ681	M.RESISTOR CH 1/10W 680	1	
R740	ERJ6GEYJ394	M.RESISTOR CH 1/10W 390K	1	
R741	ERJ6GEYJ222	M.RESISTOR CH 1/10W 2.2K	1	
R742	ERJ6GEYJ473	M.RESISTOR CH 1/10W 47K	1	
R743	ERJ6GEYJ474	M.RESISTOR CH 1/10W 470K	1	
R744	ERJ6GEYJ562	M.RESISTOR CH 1/10W 5.6K	1	
R745	ERJ6GEYJ331	M.RESISTOR CH 1/10W 330	1	
R746	ERDS2TJ151	C.RESISTOR 1/4W 150	1	
R750	ERJ6GEYJ102	M.RESISTOR CH 1/10W 1K	1	
R757	ERJ6GEYJ103	M.RESISTOR CH 1/10W 10K	1	
R758	ERJ6GEYJ102	M.RESISTOR CH 1/10W 1K	1	
R763	ERJ6GEYJ221	M.RESISTOR CH 1/10W 220	1	

Ref.No.		Part No.	Part Name & Description	Pcs	Remarks
R772		ERJ6GEYJ271	M.RESISTOR CH 1/10W 270	1	
R773		ERJ6GEYJ472	M.RESISTOR CH 1/10W 4.7K	1	
R774		ERJ6GEYJ562	M.RESISTOR CH 1/10W 5.6K	1	
R781		ERJ6GEYJ103	M.RESISTOR CH 1/10W 10K	1	
R790		ERJ6GEYJ222	M.RESISTOR CH 1/10W 2.2K	1	
R793		ERJ6GEYJ101	M.RESISTOR CH 1/10W 100	1	
R794		ERJ6GEYJ102	M.RESISTOR CH 1/10W 1K	1	
R796		ERJ6GEYJ271	M.RESISTOR CH 1/10W 270	1	
R797		ERJ6GEYJ391	M.RESISTOR CH 1/10W 390	1	
R798		ERJ6GEYJ104	M.RESISTOR CH 1/10W 100K	1	
R799		ERJ6GEYJ272	M.RESISTOR CH 1/10W 2.7K	1	
R801		ERJ6GMYJ102	M.RESISTOR CH 1/10W 1K	1	
R802,03		ERJ6GMYJ471	M.RESISTOR CH 1/10W 470	2	
R804,05		ERJ6GMYJ103	M.RESISTOR CH 1/10W 10K	2	
R806		ERJ6GMYJ221	M.RESISTOR CH 1/10W 220	1	
R807		ERJ6GMYJ271	M.RESISTOR CH 1/10W 270	1	
R813		ERJ6GMYJ102	M.RESISTOR CH 1/10W 1K	1	
R814		ERJ6GMYJ393	M.RESISTOR CH 1/10W 39K	1	
R815		ERJ6GMYJ821	M.RESISTOR CH 1/10W 820	1	
R816		ERJ6GMYJ471	M.RESISTOR CH 1/10W 470	1	
R817		ERJ6GMYJ182	M.RESISTOR CH 1/10W 1.8K	1	
R818		ERJ6GMYJ681	M.RESISTOR CH 1/10W 680	1	
R819		ERJ6GMYJ272	M.RESISTOR CH 1/10W 2.7K	1	
R820,21		ERJ6GMYJ122	M.RESISTOR CH 1/10W 1.2K	2	
R823,24		ERJ6GMYJ152	M.RESISTOR CH 1/10W 1.5K	2	
R825		ERJ6GM2OR00	M.RESISTOR CH 1/10W 0	1	
R827		ERJ6GMYJ122	M.RESISTOR CH 1/10W 1.2K	1	
R828		ERJ6GMYJ271	M.RESISTOR CH 1/10W 270	1	
R829		ERJ6GMYJ122	M.RESISTOR CH 1/10W 1.2K	1	
R830		ERJ6GMYJ271	M.RESISTOR CH 1/10W 270	1	
R831		ERJ6GMYJ681	M.RESISTOR CH 1/10W 680	1	
R832		ERJ6GMYJ154	M.RESISTOR CH 1/10W 150K	1	
R833		ERJ6GMYJ204	M.RESISTOR CH 1/10W 200K	1	
R834		ERJ6GMYJ153	M.RESISTOR CH 1/10W 15K	1	
R835		ERJ6GMYJ103	M.RESISTOR CH 1/10W 10K	1	
R836		ERJ6GMYJ154	M.RESISTOR CH 1/10W 150K	1	
R848		ERJ6GMYJ222	M.RESISTOR CH 1/10W 2.2K	1	
R849		ERJ6GMYJ473	M.RESISTOR CH 1/10W 47K	1	
R850		ERJ6GMYJ563	M.RESISTOR CH 1/10W 56K	1	
R853		ERJ6GMYJ473	M.RESISTOR CH 1/10W 47K	1	
R855		ERJ6GMYJ152	M.RESISTOR CH 1/10W 1.5K	1	
R856		ERJ6GMYJ102	M.RESISTOR CH 1/10W 1K	1	
R857		ERJ6GMYJ101	M.RESISTOR 1/10W 100	1	
R859		ERJ6GMYJ102	M.RESISTOR CH 1/10W 1K	1	
R1001		ERJ6GMYJ103	M.RESISTOR CH 1/10W 10K	1	
R2001		ERJ6GMYJ104	M.RESISTOR CH 1/10W 100K	1	
R2002		ERJ6GMYJ332	M.RESISTOR CH 1/10W 3.3K	1	
R2003		ERJ6GMYJ222	M.RESISTOR CH 1/10W 2.2K	1	
R2004		ERG12SJ561	M.RESISTOR 1/2W 560	1	
R2005		ERJ6GMYG821	M.RESISTOR CH 1/10W 820	1	
R2006		ERJ6GMYJ102	M.RESISTOR CH 1/10W 1K	1	
R2007		ERJ6GMYG432	M.RESISTOR CH 1/10W 4.3K	1	
R2008		ERJ6GMYG473	M.RESISTOR CH 1/10W 47K	1	
R2012		ERJ6GMYJ684	M.RESISTOR CH 1/10W 680K	1	
R2013		ERJ6GMYG103	M.RESISTOR CH 1/10W 10K	1	
R2014		ERJ6GMYG133	M.RESISTOR CH 1/10W 13K	1	
R2015		ERJ6GMYJ272	M.RESISTOR CH 1/10W 2.7K	1	
R2016		ERJ6GMYJ105	M.RESISTOR CH 1/10W 1M	1	
R2017		ERO52CKG6800	M.RESISTOR 1/4W 680	1	
R2018		ERX12SJR47	M.RESISTOR CH 1/2W 0.47	1	
R2019-21		ERDS2TJ560	C.RESISTOR 1/4W 56	3	
R2022		ERJ6GMYJ102	M.RESISTOR CH 1/10W 1K	1	
R2023		ERJ6GM2OR00	M.RESISTOR CH 1/10W 0	1	
R2024		ERJ6GMYJ563	M.RESISTOR CH 1/10W 56K	1	
R2030		ERJ6GMYJ683	M.RESISTOR CH 1/10W 68K	1	
R2031		ERJ6GMYJ563	M.RESISTOR CH 1/10W 56K	1	
R2032		ERJ6GMYJ333	M.RESISTOR CH 1/10W 33K	1	
R2034		ERJ6GMYJ682	M.RESISTOR CH 1/10W 6.8K	1	
R2035,36		ERJ6GMYJ223	M.RESISTOR CH 1/10W 22K	2	
R2038		ERJ6GMYJ392	M.RESISTOR CH 1/10W 3.9K	1	
R2039		ERJ6GMYJ105	M.RESISTOR CH 1/10W 1M	1	
R2040,41		ERJ6GMYJ472	M.RESISTOR CH 1/10W 4.7K	2	
R2042		ERJ6GMYJ221	M.RESISTOR CH 1/10W 220	1	
R2043		ERJ6GMYJ105	M.RESISTOR CH 1/10W 1M	1	
R2044		ERJ6GMYJ392	M.RESISTOR CH 1/10W 3.9K	1	

Ref.No.		Part No.	Part Name & Description	Pcs	Remarks
R2045		ERJ6GMYJ562	M.RESISTOR CH 1/10W 5.6K	1	
R2046		ERJ6GMYJ102	M.RESISTOR CH 1/10W 1K	1	
R2047,48		ERJ6GMYJ223	M.RESISTOR CH 1/10W 22K	2	
R2049		ERJ6GMYJ683	M.RESISTOR CH 1/10W 68K	1	
R2050		ERJ6GMYJ332	M.RESISTOR CH 1/10W 3.3K	1	
R2051		ERJ6GMYJ392	M.RESISTOR CH 1/10W 3.9K	1	
R2052		ERJ6GMYJ222	M.RESISTOR CH 1/10W 2.2K	1	
R2053,54		ERJ6GMYJ223	M.RESISTOR CH 1/10W 22K	2	
R2055		ERJ6GM2OR00	M.RESISTOR CH 1/10W 0	1	
R2056		ERX1SJ1R8	M.RESISTOR 1W 1.8	1	
R2058		ERJ6GM2OR00	M.RESISTOR CH 1/10W 0	1	
R3001		ERDS2TJ222	C.RESISTOR 1/4W 2.2K	1	
R3002		ERDS2TJ102	C.RESISTOR 1/4W 1K	1	
R3003		ERJ6GMYJ102	M.RESISTOR CH 1/10W 1K	1	
R3004		ERJ6GMYJ561	M.RESISTOR CH 1/10W 560	1	
R3005		ERJ6GMYJ391	M.RESISTOR CH 1/10W 390	1	
R3006		ERJ6GMYJ561	M.RESISTOR CH 1/10W 560	1	
R3007		ERJ6GMYJ102	M.RESISTOR CH 1/10W 1K	1	
R3014		ERJ6GMYJ103	M.RESISTOR CH 1/10W 10K	1	
R3018		ERJ6GMYJ332	M.RESISTOR CH 1/10W 3.3K	1	
R3019		ERJ6GMYJ272	M.RESISTOR CH 1/10W 2.7K	1	
R3021		ERJ6GM2OR00	M.RESISTOR CH 1/10W 0	1	
R3023		ERJ6GMYJ471	M.RESISTOR CH 1/10W 470	1	
R3024		ERJ6GM2OR00	M.RESISTOR CH 1/10W 0	1	
R3025		ERJ6GMYJ821	M.RESISTOR CH 1/10W 820	1	
R3027		ERJ6GMYJ821	M.RESISTOR CH 1/10W 820	1	
R3028		ERJ6GMYJ750	M.RESISTOR CH 1/10W 75	1	
R3029		ERJ6GMYJ103	M.RESISTOR CH 1/10W 10K	1	
R3033		ERJ6GMYJ152	M.RESISTOR CH 1/10W 1.5K	1	
R3034		ERJ6GMYJ102	M.RESISTOR CH 1/10W 1K	1	
R3035		ERJ6GMYJ561	M.RESISTOR CH 1/10W 560	1	
R3037		ERJ6GMYJ222	M.RESISTOR CH 1/10W 2.2K	1	
R3038		ERJ6GMYJ102	M.RESISTOR CH 1/10W 1K	1	
R3039		ERJ6GMYJ681	M.RESISTOR CH 1/10W 680	1	
R3040,41		ERJ6GMYJ473	M.RESISTOR CH 1/10W 47K	2	
R3042		ERJ6GMYJ222	M.RESISTOR CH 1/10W 2.2K	1	
R3043		ERJ6GMYJ103	M.RESISTOR CH 1/10W 10K	1	
R3048,49		ERJ6GM2OR00	M.RESISTOR CH 1/10W 0	2	
R4001		ERJ6GMYJ332	M.RESISTOR CH 1/10W 3.3K	1	
R4002		ERJ6GMYJ103	M.RESISTOR CH 1/10W 10K	1	
R4003		ERJ6GMYJ273	M.RESISTOR CH 1/10W 27K	1	
R4004		ERJ6GMYG273	M.RESISTOR CH 1/10W 27K	1	
R4005		ERJ6GMYG823	M.RESISTOR CH 1/10W 82K	1	
R4006		ERJ6GMYG683	M.RESISTOR CH 1/10W 68K	1	
R4007		ERJ6GMYG100	M.RESISTOR CH 1/10W 10	1	
R4008,09		ERJ6GMYJ472	M.RESISTOR CH 1/10W 4.7K	2	
R4010		ERJ6GMYJ102	M.RESISTOR CH 1/10W 1K	1	
R4011		ERDS2TJ471	C.RESISTOR 1/4W 470	1	
R4013		ERJ6GMYJ332	M.RESISTOR CH 1/10W 3.3K	1	
R4014		ERJ6GMYJ682	M.RESISTOR CH 1/10W 6.8K	1	
R4015		ERJ6GMYJ332	M.RESISTOR CH 1/10W 3.3K	1	
R4016		ERJ6GMYJ562	M.RESISTOR CH 1/10W 5.6K	1	
R4017		ERJ6GMYJ152	M.RESISTOR CH 1/10W 1.5K	1	
R4018		ERDS2TJ273	C.RESISTOR 1/4W 27K	1	
R4019		ERJ6GMYJ153	M.RESISTOR CH 1/10W 15K	1	
R4020		ERJ6GMYJ123	M.RESISTOR CH 1/10W 12K	1	
R4021		ERJ6GMYJ153	M.RESISTOR CH 1/10W 15K	1	
R4022		ERJ6GMYJ472	M.RESISTOR CH 1/10W 4.7K	1	
R4024		ERJ6GMYJ332	M.RESISTOR CH 1/10W 3.3K	1	
R4025		ERJ6GMYJ333	M.RESISTOR CH 1/10W 33K	1	
R4026		ERJ6GMYJ473	M.RESISTOR CH 1/10W 47K	1	
R4027		ERJ6GMYJ433	M.RESISTOR CH 1/10W 43K	1	
R4028		ERJ6GMYJ332	M.RESISTOR CH 1/10W 3.3K	1	
R4029		ERJ6GMYJ222	M.RESISTOR CH 1/10W 2.2K	1	
R4032		ERJ6GMYJ392	M.RESISTOR CH 1/10W 3.9K	1	
R4034		ERJ6GMYJ823	M.RESISTOR CH 1/10W 82K	1	
R4035,36		ERJ6GMYJ473	M.RESISTOR CH 1/10W 47K	2	
R4037		ERJ6GMYJ104	M.RESISTOR CH 1/10W 100K	1	
R4501,02		ERJ3GEY0R00	M.RESISTOR CH 1/16W 0	2	
R4503		VRE0071E36C	M.RESISTOR 1/10W	1	
R4504,05		ERJ6GEYJ393	M.RESISTOR CH 1/10W 39K	2	
R4506,07		ERJ6GEYJ473	M.RESISTOR CH 1/10W 47K	2	
R4508		ERJ6GEYG224	M.RESISTOR CH 1/10W 220K	1	
R4509		ERJ6GEYJ822	M.RESISTOR CH 1/10W 8.2K	1	
R4510		ERJ6GEYJ621	M.RESISTOR CH 1/10W 620	1	

Ref.No.	Part No.	Part Name & Description	Pcs	Remarks
R4511	ERJ6GEYG303	M.RESISTOR CH 1/10W 30K	1	
R4512	VRE0034E163	M.RESISTOR CH 1/10W 16K	1	
R4513	ERJ3GEYG103	M.RESISTOR CH 1/16W 10K	1	
R4514	ERJ6GEYJ223	M.RESISTOR CH 1/10W 22K	1	
R4518,19	ERJ6GMZOR00	M.RESISTOR CH 1/10W 0	2	
R4522	ERJ6GEYJ225	M.RESISTOR CH 1/10W 2.2M	1	
R4527	VRE0034E333	M.RESISTOR CH 1/10W 33K	1	
R4528	VRE0034E153	M.RESISTOR CH 1/10W 15K	1	
R4529	ERJ6GEYG562	M.RESISTOR CH 1/10W 5.6K	1	
R4530	ERJ3GEYJ334	M.RESISTOR CH 1/16W 330K	1	
R4534	ERJ6GEYJ472	M.RESISTOR CH 1/10W 4.7K	1	
R4535	ERJ3GEYJ104	M.RESISTOR CH 1/16W 100K	1	
R4539	ERJ6GEYJ104	M.RESISTOR CH 1/10W 100K	1	
R4540	ERJ3GEYOR00	M.RESISTOR CH 1/16W 0	1	
R4541	ERJ6GEYJ152	M.RESISTOR CH 1/10W 1.5K	1	
R4542	ERJ6GEYJ222	M.RESISTOR CH 1/10W 2.2K	1	
R4543	ERJ3GEYJ472	M.RESISTOR CH 1/16W 4.7K	1	
R4551,52	ERJ3GEYJ393	M.RESISTOR CH 1/16W 39K	2	
R4553	ERJ6GEYJ273	M.RESISTOR CH 1/10W 27K	1	
R4554	ERJ3GEYJ273	M.RESISTOR CH 1/16W 27K	1	
R4558	ERJ6GEYG224	M.RESISTOR CH 1/10W 220K	1	
R4561	ERJ6GEYG303	M.RESISTOR CH 1/10W 30K	1	
R4562	VRE0034E10C	M.RESISTOR 1/10W	1	
R4563	ERJ3GEYG272	M.RESISTOR CH 1/16W 2.7K	1	
R4568	ERJ6GEYJ273	M.RESISTOR CH 1/10W 27K	1	
R4569	ERJ3GEYJ273	M.RESISTOR CH 1/16W 27K	1	
R4573	ERJ6GEYJ152	M.RESISTOR CH 1/10W 1.5K	1	
R4577	ERJ3GEYJ473	M.RESISTOR CH 1/16W 47K	1	
R4578	VRE0034E473	M.RESISTOR CH 1/10W 47K	1	
R4581	ERJ6GEYJ104	M.RESISTOR CH 1/10W 100K	1	
R4583	ERJ3GEYJ102	M.RESISTOR 1/16W 1K	1	
R4584	ERJ6GEYJ152	M.RESISTOR CH 1/10W 1.5K	1	
R4585	ERJ3GEYOR00	M.RESISTOR CH 1/16W 0	1	
R4586	ERJ6GEYJ152	M.RESISTOR CH 1/10W 1.5K	1	
R4587,88	ERJ3GEYJ273	M.RESISTOR CH 1/16W 27K	2	
R4591	ERJ3GEYJ473	M.RESISTOR CH 1/16W 47K	1	
R4592	ERJ6GEYJ563	M.RESISTOR CH 1/10W 56K	1	
R4593	ERJ6GEYJ472	M.RESISTOR CH 1/10W 4.7K	1	
R4594	ERJ3GEYJ473	M.RESISTOR CH 1/16W 47K	1	
R4603	ERJ3GEYG183	M.RESISTOR CH 1/16W 18K	1	
R4606	ERJ6GEYJ562	M.RESISTOR CH 1/10W 5.6K	1	
R4610	ERJ6GEYJ473	M.RESISTOR CH 1/10W 47K	1	
R4611,12	ERJ6GEYJ331	M.RESISTOR CH 1/10W 330	2	
R4613	ERJ6GEYJ394	M.RESISTOR CH 1/10W 390K	1	
R4615	ERJ6GEYJ133	M.RESISOTR CH 1/10W 13K	1	
R4616	ERJ6GEYJ105	M.RESISTOR CH 1/10W 1M	1	
R4638	ERJ6GMZOR00	M.RESISTOR CH 1/10W 0	1	
R4649	ERJ3GEYG470	M.RESISTOR CH 1/16W 47	1	
R4651	ERJ6GEYJ101	M.RESISTOR CH 1/10W 100	1	
R4653	ERJ6GEYJ471	M.RESISTOR CH 1/10W 470	1	
R4654	ERJ6GEYJ223	M.RESISTOR CH 1/10W 22K	1	
R4655	ERJ6GEYJ562	M.RESISTOR CH 1/10W 5.6K	1	
R4656	ERJ6GEYG243	M.RESISTOR CH 1/10W 24K	1	
R4657	ERJ6GEYJ392	M.RESISTOR CH 1/10W 3.9K	1	
R4659	ERJ3GEYJ123	M.RESISTOR CH 1/16W 12K	1	
R4665	ERJ6GEYJ471	M.RESISTOR CH 1/10W 470	1	
R6001-04	ERJ6GMYJ102	M.RESISTOR CH 1/10W 1K	4	
R6005-07	ERJ6GMYJ333	M.RESISTOR CH 1/10W 33K	3	
R6009	ERJ6GMYG332	M.RESISTOR CH 1/10W 3.3K	1	
R6010	ERJ6GMYG102	M.RESISTOR CH 1/10W 1K	1	
R6011	ERJ6GMYG112	M.REISITOR CH 1/10W 1.1K	1	
R6012	ERJ6GMYJ223	M.RESISTOR CH 1/10W 22K	1	
R6013	ERO52CKG2000	M.PSSISTOR 1/4W 200	1	
R6014,15	ERJ6GMYG223	M.RESISTOR CH 1/10W 22K	2	
R6016	ERJ6GMYJ103	M.RESISTOR CH 1/10W 10K	1	
R6017	ERJ6GMYJ271	M.RESISTOR CH 1/10W 270	1	
R6018	ERJ6GMYJ683	M.RESISTOR CH 1/10W 68K	1	
R6019	ERJ6GMYJ104	M.RESISTOR CH 1/10W 100K	1	
R6020	ERJ6GMYJ101	M.RESISTOR 1/10W 100	1	
R6021	ERJ6GMYJ103	M.RESISTOR CH 1/10W 10K	1	
R6022	ERJ6GMYJ222	M.RESISTOR CH 1/10W 2.2K	1	
R6023,24	ERJ6GMYJ103	M.RESISTOR CH 1/10W 10K	2	
R6025,26	ERJ6GMYJ272	M.RESISTOR CH 1/10W 2.7K	2	
R6027	ERJ6GMYJ221	M.RESISTOR CH 1/10W 220	1	
R6028	ERJ6GMYJ224	M.RESISTOR CH 1/10W 220K	1	

Ref.No.	Part No.	Part Name & Description	Pcs	Remarks
R6029	ERJ6GMYJ104	M.RESISTOR CH 1/10W 100K	1	
R6030	ERJ6GMYJ221	M.RESISTOR CH 1/10W 220	1	
R6031	ERJ6GMYJ183	M.RESISTOR CH 1/10W 18K	1	
R6032,33	ERJ6GMYJ333	M.RESISTOR CH 1/10W 33K	2	
R6034	ERJ6GMYJ472	M.RESISTOR CH 1/10W 4.7K	1	
R6035,36	ERJ6GMYJ102	M.RESISTOR CH 1/10W 1K	2	
R6037	ERJ6GMYJ562	M.RESISTOR CH 1/10W 5.6K	1	
R6038	ERJ6GMYJ223	M.RESISTOR CH 1/10W 22K	1	
R6039	ERJ6GMYJ103	M.RESISTOR CH 1/10W 10K	1	
R6043	ERJ6GMYJ683	M.RESISTOR CH 1/10W 68K	1	
R6044	ERJ6GMYJ103	M.RESISTOR CH 1/10W 10K	1	
R6045,46	ERJ6GMYJ102	M.RESISTOR CH 1/10W 1K	2	
R6050,51	ERJ6GMYJ272	M.RESISTOR CH 1/10W 2.7K	2	
R6052,53	ERJ6GMYJ103	M.RESISTOR CH 1/10W 10K	2	
R6054	ERJ6GMYJ102	M.RESISTOR CH 1/10W 1K	1	
R6055,56	ERJ6GMYJ101	M.RESISTOR 1/10W 100	2	
R6057	ERJ6GMYJ472	M.RESISTOR CH 1/10W 4.7K	1	
R6078	VRE0034E103	M.RESISTOR CH 1/10W 10K	1	
R6079	ERJ6GMYJ564	M.RESISTOR CH 1/10W 560K	1	
R6080	VRE0034E103	M.RESISTOR CH 1/10W 10K	1	
R6081	VRE0034E472	M.RESISTOR CH 1/10W 4.7K	1	
R6082	VRE0034E512	M.RESISTOR CH 1/10W 5.1K	1	
R7001	ERJ6GMYJ103	M.RESISTOR CH 1/10W 10K	1	
R7002	ERJ6GMYJ181	M.RESISTOR CH 1/10W 180	1	
R7004,05	ERJ6GMYJ151	M.RESISTOR CH 1/10W 150	2	
R7006,07	ERJ6GMYJ332	M.RESISTOR CH 1/10W 3.3K	2	
R7009,10	ERJ6GMYJ332	M.RESISTOR CH 1/10W 3.3K	2	
R7011	ERJ6GMYJ102	M.RESISTOR CH 1/10W 1K	1	
R7013,14	ERJ6GMYJ332	M.RESISTOR CH 1/10W 3.3K	2	
R7018,19	ERJ6GMYJ332	M.RESISTOR CH 1/10W 3.3K	2	
R7024-26	ERJ6GMYJ221	M.RESISTOR CH 1/10W 220	3	
R7034	ERJ6GMYJ101	M.RESISTOR 1/10W 100	1	
R7035	ERJ6GMZOR00	M.RESISTOR CH 1/10W 0	1	
R7656	ERJ6GEYJ221	M.RESISTOR CH 1/10W 220	1	
R7676	ERG1SJ152	M.RESISTOR 1W 1.5K	1	
R7901	ERJ3GEYJ471	M.RESISTOR CH 1/16W 470	1	
R7902	ERJ3GEYJ821	M.RESISTOR CH 1/16W 820	1	
R7903	ERJ3GEYJ472	M.RESISTOR CH 1/16W 4.7K	1	
R7904	ERJ6GEYJ152	M.RESISTOR CH 1/10W 1.5K	1	
R7905	ERJ6GEYJ471	M.RESISTOR CH 1/10W 470	1	
R7906	ERJ6GEYJ150	M.RESISTOR CH 1/10W 15	1	
R7907	ERJ6GEYJ561	M.RESISTOR CH 1/10W 560	1	
R7908	ERJ6GEYJ152	M.RESISTOR CH 1/10W 1.5K	1	
R7909-11	ERJ6GEYJ331	M.RESISTOR CH 1/10W 330	3	
R7913-15	ERJ3GEYJ682	M.RESISTOR CH 1/16W 6.8K	3	
R7917	ERJ3GEYJ103	M.RESISTOR CH 1/16W 10K	1	
R7918-21	ERJ3GEYJ473	M.RESISTOR CH 1/16W 47K	4	
R7922	ERJ3GEYJ563	M.RESISTOR CH 1/16W 56K	1	
R7923	ERJ3GEYJ394	M.RESISTOR CH 1/16W 390K	1	
R7924-26	ERJ3GEYJ103	M.RESISTOR CH 1/16W 10K	3	
R7927	ERJ3GEYJ562	M.RESISTOR CH 1/16W 5.6K	1	
R7928	ERJ3GEYJ102	M.RESISTOR 1/16W 1K	1	
R7929	ERJ3GEYJ563	M.RESISTOR CH 1/16W 56K	1	
R7930	ERJ3GEYJ394	M.RESISTOR CH 1/16W 390K	1	
R7931-33	ERJ3GEYJ103	M.RESISTOR CH 1/16W 10K	3	
R7934	ERJ3GEYJ562	M.RESISTOR CH 1/16W 5.6K	1	
R7935	ERJ3GEYJ102	M.RESISTOR 1/16W 1K	1	
R7936	ERJ3GEYJ223	M.RESISTOR CH 1/16W 22K	1	
R7937	ERJ3GEYJ393	M.RESISTOR CH 1/16W 39K	1	
R7938	ERJ3GEYJ222	M.RESISTOR CH 1/16W 2.2K	1	
R7939	ERJ3GEYJ224	M.RESISTOR CH 1/16W 220K	1	
R7940	ERJ3GEYJ181	M.RESISTOR CH 1/16W 180	1	
R7941	ERJ3GEYJ681	M.RESISTOR CH 1/16W 680	1	
R7942	ERJ3GEYJ393	M.RESISTOR CH 1/16W 39K	1	
R7943	ERJ3GEYJ473	M.RESISTOR CH 1/16W 47K	1	
R7944	ERJ3GEYJ392	M.RESISTOR CH 1/16W 3.9K	1	
R7945	ERJ3GEYJ822	M.RESISTOR CH 1/16W 8.2K	1	
R7946,47	ERJ3GEYJ473	M.RESISTOR CH 1/16W 47K	2	
R7948	ERJ3GEYJ472	M.RESISTOR CH 1/16W 4.7K	1	
R7949	ERJ3GEYJ822	M.RESISTOR CH 1/16W 8.2K	1	
R7950	ERJ3GEYJ472	M.RESISTOR CH 1/16W 4.7K	1	
R7951	ERJ3GEYJ822	M.RESISTOR CH 1/16W 8.2K	1	
R7956	ERJ3GEYJ822	M.RESISTOR CH 1/16W 8.2K	1	
R7957	ERJ3GEYJ472	M.RESISTOR CH 1/16W 4.7K	1	
R7958,59	ERJ3GEYJ823	M.RESISTOR CH 1/16W 82K	2	

Ref.No.		Part No.	Part Name & Description	Pcs	Remarks
R7960,61		ERJ6GEYJ47i	M.RESISTOR CH 1/10W 470	2	
R7962,63		ERJ3GEYJ101	M.RESISTOR CH 1/16W 100	2	
R7964		ERJ3GEYJ272	M.RESISTOR CH 1/16W 2.7K	1	
R7969-72		ERJ3GEYJ101	M.RESISTOR CH 1/16W 100	4	
R7973-77		ERJ3GEYJ103	M.RESISTOR CH 1/16W 10K	5	
R7978		ERJ3GEYJ104	M.RESISTOR CH 1/16W 100K	1	
R7979		ERJ3GEYJ152	M.RESISTOR 1/16W 1.5K	1	
R7980		ERJ3GEYJ104	M.RESISTOR CH 1/16W 100K	1	
R7981,82		ERJ3GEYJ102	M.RESISTOR 1/16W 1K	2	
R7983		ERJ3GEYJ103	M.RESISTOR CH 1/16W 10K	1	
R7985		ERJ3GEYJ271	M.RESISTOR CH 1/16W 270	1	
R7987		ERJ3GEYJ563	M.RESISTOR CH 1/16W 56K	1	
R7988		ERJ3GEYJ121	M.RESISTOR CH 1/16W 120	1	
R7989		ERDS2TJ823	C.RESISTOR 1/4W 82K	1	
R8001,02		ERJ6GMYJ223	M.RESISTOR CH 1/10W 22K	2	
R8003		ERJ6GMYJ222	M.RESISTOR CH 1/10W 2.2K	1	
			TRANSFORMERS		
T703		EIV5EC057A	TRANSFORMER	1	
T704		EIV5EC006A1	TRANSFORMER	1	
T711		EIS5EC004A	TRANSFORMER	1	
T4001		EIQ7QF013Q	TRANSFORMER	1	
			VARIABLE RESISTORS		
VR701,02		EVTEASA00B53	V.RESISTOR	2	
VR741		EVNCBAA00B14	V.RESISTOR	1	
VR751		EVNCBAA00B53	V.RESISTOR	1	
VR801,02		EVTEASA00B13	V.RESISTOR	2	
VR803		EVNCBAA00B14	V.RESISTOR	1	
VR2001		EVNDXAA00B54	V.RESISTOR 50K	1	
VR2006		EVNDXAA00B15	V.RESISTOR 100K	1	
VR2011		EVNDXAA00B15	V.RESISTOR 100K	1	
VR2018,19		EVNDXAA00B15	V.RESISTOR 100K	2	
VR3001		EVNDXAA00B23	V.RESISTOR 2K	1	
VR3012,13		EVNDXAA00B52	V.RESISTOR 500	2	
VR4001		EVNDXAA00B25	V.RESISTOR 200K	1	
VR4501		EVMECSA00B53	V.RESISTOR	1	
VR4502		EVMEASA00B24	V.RESISTOR	1	
VR4507		EVMEASA00B24	V.RESISTOR	1	
VR4509		EVMECSA00BY3	V.RESISTOR	1	
VR4512		EVNCBAA00B52	V.RESISTOR	1	
VR4550		EVMECSA00BS3	V.RESISTOR	1	
VR4551,52		EVMEASA00B55	V.RESISTOR	2	
VR7901,02		EVNCBAA00B14	V.RESISTOR	2	
VR7903		EVTEASA00B55	V.RESISTOR	1	
VR8001		EVNDXAA00B23	V.RESISTOR 2K	1	
			CRYSTAL OSCILLATORS		
X710		EFCH38MGQ1	CRYSTAL OSCILLATOR	1	
X712		EFCS5R5MS5	FILTER	1	
X713		EFCS5R5MW5	FILTER	1	
XB01		VSX0162	CRYSTAL OSCILLATOR	1	
X6001		VSX0409	CRYSTAL OSCILLATOR	1	
X7001		VSQ0565	CRYSTAL OSCILLATOR	1	
X7901		VSX0514	CRYSTAL OSCILLATOR	1	
X7902		VSX0512	CRYSTAL OSCILLATOR	1	
X7903		EFCA5504BF	CRYSTAL OSCILLATOR	1	
			MISCELLANEOUS		
		VEE8276	WIRE CABLE	1	(P4011-P7702)
		VEE8356	WIRE CABLE	1	(P6005-P6501,P4013)
		VEE8278	WIRE CABLE	1	(P2002-P1506)
		VEE8279	WIRE CABLE	1	(P2001-P2902)
		VEE8280	WIRE CABLE	1	(P4002-P1509)
		VEE8451	WIRE CABLE	1	(P1001,3-P1102)
		VWJ0682	FLAT CARD CABLE	1	(P3001-P501)
		VWJ0683A	FLAT CARD CABLE	1	(P2003-P1507)
		VWJ00B7A	FLAT CARD CABLE	1	(P6001-P1505)
		VWJ121W200B8	FLAT CARD CABLE	1	(P7401-P7501)
		VWJ240W160B8	FLAT CARD CABLE	1	(P7402-P7502)
		VJF1056	HARNESS LIFTER	1	

Ref.No.		Part No.	Part Name & Description	Pcs	Remarks
		VJF0004	WIRE SUDDLE	1	
		ENV578BSH6	TUNER	1	<!> FOR TV DEMODU.
		VSC3242	SHIELD COVER (MAIN)	1	FOR TV DEMODULATOR
		VSC3241	SHIELD COVER (TOP)	1	FOR TV DEMODULATOR
		VSC3553	SHIELD COVER (MAIN)	1	FOR NICAM DECODER
		VSC3554	SHIELD COVER (TOP)	1	FOR NICAM DECODER
		VSC3555	SHIELD COVER (BOTTOM)	1	FOR NICAM DECODER
	■	VEP03985A	INPUT/OUTPUT PACK C.B.A.		(RTL)NV-HD100B
					SUPPLIED FROM M.B.V.
			CAPACITORS		
C3901		ECEA1CK101	E.CAPACITOR 16V 100U	1	
C3902		ECUM1H103ZFN	C.CAPACITOR CH 50V 0.01U	1	
C3903		ECEA1CK470	E.CAPACITOR 16V 47U	1	
C3904-06		ECEA1CK220	E.CAPACITOR 16V 22U	3	
C3907,08		ECEA1CK100	E.CAPACITOR 16V 10U	2	
C3909,10		ECUM1H332KBN	C.CAPACITOR CH 50V 3300P	2	
C3911,12		ECUM1H181JCN	C.CAPACITOR CH 50V 180P	2	
C3915		ECEA1CK100	E.CAPACITOR 16V 10U	1	
C4901		ECUM1H101JCN	C.CAPACITOR CH 50V 100P	1	
C4902,03		ECUM1H222JN	C.CAPACITOR CH 50V 2200P	2	
C4904		ECUM1H101JCN	C.CAPACITOR CH 50V 100P	1	
C4905-07		VCEA1CA0100	E.CAPACITOR 16V 10U	3	
C4908		ECUM1H101JCN	C.CAPACITOR CH 50V 100P	1	
C4909,10		ECUM1H222JN	C.CAPACITOR CH 50V 2200P	2	
C4911		ECUM1H101JCN	C.CAPACITOR CH 50V 100P	1	
C4912,13		ECUM1H222JN	C.CAPACITOR CH 50V 2200P	2	
C4914,15		VCEA1AAC101	E.CAPACITOR 10V 100U	2	
C4916		VCEA1CA0100	E.CAPACITOR 16V 10U	1	
C4951		VCEA1CAC470	E.CAPACITOR 16V 47U	1	
C4952		VCEA1AAC470	E.CAPACITOR 10V 47U	1	
C4953		ECUM1H1042FN	C.CAPACITOR CH 50V 0.1U	1	
C4954		VCEA1CAC330	E.CAPACITOR 16V 33U	1	
C4955,56		ECUM1H103ZFN	C.CAPACITOR CH 50V 0.01U	2	
			DIODES		
D3903-05		1SS254	DIODE	3	
D3911-14		1SS254	DIODE	4	
D4951		MA4068L	DIODE	1	
			INTEGRATED CIRCUITS		
IC3901		M51292FP	IC	1	
IC3902		BA7004	IC	1	
IC4901		M51293FP	IC	1	
IC4905		UPC78L06J	IC	1	
			COILS		
L3901-03		ELESQ101KA	COIL 100UH	3	
L4951		ELESQ101KA	COIL 100UH	1	
			CONNECTORS		
P1002		VJS1141	CONNECTOR (FEMALE) 2P	1	
PS3951		VJS3042F016P	CONNECTOR (FEMALE)	1	
PS3952		VJS3042B017W	CONNECTOR (FEMALE)	1	
			TRANSISTORS		
Q3901		2SC2295	TRANSISTOR	1	
Q4951		2SB774	TRANSISTOR	1	

Ref.No.		Part No.	Part Name & Description	Pcs	Remarks
			COMBINATION PARTS		
QR3901		MRN2404	TRANSISTOR-RESISTOR	1	
			RESISTORS		
R3901-04		ERJ6GMYJ750	M.RESISTOR CH 1/10W 75	4	
R3905		ERJ6GMYJ182	M.RESISTOR CH 1/10W 1.8K	1	
R3906		ERJ6GMYJ104	M.RESISTOR CH 1/10W 100K	1	
R3909		ERJ6GMYJ102	M.RESISTOR CH 1/10W 1K	1	
R3910		ERJ6GMYJ152	M.RESISTOR CH 1/10W 1.5K	1	
R3911		ERJ6GMYJ392	M.RESISTOR CH 1/10W 3.9K	1	
R3912		ERJ6GMYJ152	M.RESISTOR CH 1/10W 1.5K	1	
R3913		ERJ6GMYJ561	M.RESISTOR CH 1/10W 560	1	
R3915,16		ERJ6GMYJ473	M.RESISTOR CH 1/10W 47K	2	
R3917		ERJ6GMYJ472	M.RESISTOR CH 1/10W 4.7K	1	
R4901		ERJ6GMYJ222	M.RESISTOR CH 1/10W 2.2K	1	
R4902,03		ERJ6GMYJ221	M.RESISTOR CH 1/10W 220	2	
R4904		ERJ6GMYJ222	M.RESISTOR CH 1/10W 2.2K	1	
R4905		ERJ6GMYJ221	M.RESISTOR CH 1/10W 220	1	
R4906		ERJ6GMYJ222	M.RESISTOR CH 1/10W 2.2K	1	
R4907		ERJ6GMYJ221	M.RESISTOR CH 1/10W 220	1	
R4908		ERJ6GMYJ222	M.RESISTOR CH 1/10W 2.2K	1	
R4910,11		ERJ6GMYJ221	M.RESISTOR CH 1/10W 220	2	
R4912		ERJ6GMYG393	M.RESISTOR CH 1/10W 39K	1	
R4913,14		ERJ6GMYJ133	M.RESISTOR CH 1/10W 13K	2	
R4915		ERJ6GMYG393	M.RESISTOR CH 1/10W 39K	1	
R4916		ERJ6GMYJ183	M.RESISTOR CH 1/10W 18K	1	
R4917		ERJ6GMYJ683	M.RESISTOR CH 1/10W 68K	1	
R4918,19		ERJ6GMYG153	M.RESISTOR CH 1/10W 15K	2	
R4920,21		ERJ6GMYJ683	M.RESISTOR CH 1/10W 68K	2	
R4922,23		ERJ6GMYG153	M.RESISTOR CH 1/10W 15K	2	
R4924		ERJ6GMYJ683	M.RESISTOR CH 1/10W 68K	1	
R4925		ERJ6GMYJ183	M.RESISTOR CH 1/10W 18K	1	
R4951		ERJ6GMYJ121	M.RESISTOR CH 1/10W 120	1	
			SWITCHES		
SW3901		ESD172253	SWITCH	1	
			CRYSTAL OSCILLATORS		
X3901		VSXD099	CRYSTAL OSCILLATOR	1	
			MISCELLANEOUS		
		VEJ1382	JACK PANEL	1	
	■	VEP03979B	INPUT/OUTPUT PACK C.B.A.		(RTL)NV-HD100EB
			CAPACITORS		
C3901		ECUM1H103ZFN	C.CAPACITOR CH 50V 0.01U	1	
C3902		ECEA1CK101	E.CAPACITOR 16V 100U	1	
C3903		ECEA1CK470	E.CAPACITOR 16V 47U	1	
C3904-06		ECEA1CK220	E.CAPACITOR 16V 22U	3	
C3908,09		ECEA1CK100	E.CAPACITOR 16V 10U	2	
C3910,11		ECUM1H332KBN	C.CAPACITOR CH 50V 3300P	2	
C3915		ECEA1AK470	E.CAPACITOR 10V 47U	1	
C3916,17		ECUM1H181JCN	C.CAPACITOR CH 50V 180P	2	
C3952		ECUM1H103ZFN	C.CAPACITOR CH 50V 0.01U	1	
C4901,02		VCEA1AAC101	E.CAPACITOR 10V 100U	2	
C4907,08		ECUM1H101JCN	C.CAPACITOR CH 50V 100P	2	
C4912		ECUM1H101JCN	C.CAPACITOR CH 50V 100P	1	
C4914		ECUM1H101JCN	C.CAPACITOR CH 50V 100P	1	
C4915,16		VCEA1CAD100	E.CAPACITOR 16V 10U	2	
C4952		VCEA1AAC470	E.CAPACITOR 10V 47U	1	
C4954		VCEA1CAC330	E.CAPACITOR 16V 33U	1	
C4955,56		ECUM1H103ZFN	C.CAPACITOR CH 50V 0.01U	2	

Ref.No.		Part No.	Part Name & Description	Pcs	Remarks
C4957,58		ECUM1H1042FN	C.CAPACITOR CH 50V 0.1U	2	
			DIODES		
D3901		1SS254	DIODE	1	
D3902		MA151K	DIODE	1	
D3911-14		1SS254	DIODE	4	
D3930		MA151WK	DIODE	1	
D4951		MA4068L	DIODE	1	
			INTEGRATED CIRCUITS		
IC3901		MS1292FP	IC	1	
IC3902		BA7004	IC	1	
IC4901		MS1293FP	IC	1	
IC4903		UPC78L06J	IC	1	
			CONNECTORS		
J3902		VJS1469	CONNECTOR (FEMALE)	1	
			COILS		
L3901-03		ELESQ101KA	COIL 100UH	3	
L4907		ELESQ101KA	COIL 100UH	1	
			CONNECTORS		
P1002		VJS1141	CONNECTOR (FEMALE) 2P	1	
PS3951		VJS3042B016W	CONNECTOR (FEMALE)	1	
PS3952		VJS3042B017W	CONNECTOR (FEMALE)	1	
			TRANSISTORS		
Q3902		2SC2295	TRANSISTOR	1	
Q4951		2SB774	TRANSISTOR	1	
			RESISTORS		
R3901-04		ERJ6GEYJ750	M.RESISTOR CH 1/10W 75	4	
R3905		ERJ6GEYJ182	M.RESISTOR CH 1/10W 1.8K	1	
R3906		ERJ6GEYJ104	M.RESISTOR CH 1/10W 100K	1	
R3907		ERJ6GEYJ102	M.RESISTOR CH 1/10W 1K	1	
R3908		ERJ6GEYJ152	M.RESISTOR CH 1/10W 1.5K	1	
R3909		ERJ6GEYJ392	M.RESISTOR CH 1/10W 3.9K	1	
R3910		ERJ6GEYJ152	M.RESISTOR CH 1/10W 1.5K	1	
R3911		ERJ6GEYJ561	M.RESISTOR CH 1/10W 560	1	
R3912		ERJ6GMZOR00	M.RESISTOR CH 1/10W 0	1	
R3951		ERJ6GEYJ473	M.RESISTOR CH 1/10W 47K	1	
R4901		ERJ6GEYG183	M.RESISTOR CH 1/10W 18K	1	
R4902,03		ERJ6GEYJ473	M.RESISTOR CH 1/10W 47K	2	
R4904		ERJ6GEYJ683	M.RESISTOR CH 1/10W 68K	1	
R4905,06		ERJ6GEYG153	M.RESISTOR CH 1/10W 15K	2	
R4907		ERJ6GEYJ683	M.RESISTOR CH 1/10W 68K	1	
R4908		ERJ6GEYJ473	M.RESISTOR CH 1/10W 47K	1	
R4909		ERJ6GEYG183	M.RESISTOR CH 1/10W 18K	1	
R4910		ERJ6GEYJ473	M.RESISTOR CH 1/10W 47K	1	
R4911		ERJ6GEYJ222	M.RESISTOR CH 1/10W 2.2K	1	
R4913		ERJ6GEYJ393	M.RESISTOR CH 1/10W 39K	1	
R4914		ERJ6GEYG133	M.RESISTOR CH 1/10W 13K	1	
R4916		ERJ6GEYG133	M.RESISTOR CH 1/10W 13K	1	
R4917		ERJ6GEYJ393	M.RESISTOR CH 1/10W 39K	1	
R4925		ERJ6GEYJ222	M.RESISTOR CH 1/10W 2.2K	1	
R4926,27		ERJ6GEYJ471	M.RESISTOR CH 1/10W 470	2	
R4928,29		ERJ6GEYJ391	M.RESISTOR CH 1/10W 390	2	
R4930,31		ERJ6GEYJ332	M.RESISTOR CH 1/10W 3.3K	2	
R4951		ERJ6GEYJ121	M.RESISTOR CH 1/10W 120	1	
			SWITCHES		
SW3901		ESD172253	SWITCH	1	

Ref.No.		Part No.	Part Name & Description	Pcs	Remarks
			CRYSTAL OSCILLATORS		
X3901		VSX0099	CRYSTAL OSCILLATOR	1	
			MISCELLANEOUS		
		VEJ1381	JACK PANEL	1	
	■	VEX0126	CYLINDER DRIVE C.B.A.		(RTL)
			CAPACITORS		
C2901-03		ECEA1VSN2R2	E.CAPACITOR 35V 2.2U	3	
C2904-06		ECUM1E104KBM	C.CAPACITOR CH 25V 0.1U	3	
C2907		ECUM1E683KBM	C.CAPACITOR CH 25V 0.068U	1	
C2908		ECUM1E473KBM	C.CAPACITOR CH 25V 0.047U	1	
C2909		ECQV1H104JS	P.CAPACITOR 50V 0.1U	1	
C2910,11		ECEA1CKS100	E.CAPACITOR 16V 10U	2	
C2912		ECEA0JKS220	E.CAPACITOR 6.3V 22U	1	
			INTEGRATED CIRCUITS		
IC2901		AN3815K	IC	1	
			CONNECTORS		
P2901		VJP2603W	CONNECTOR (MALE)	1	
P2902		VJP1232T	CONNECTOR (MALE) 5P	1	
			RESISTORS		
R2901		ERX12SJR47	M.RESISTOR CH 1/2W 0.47	1	
			THERMISTORS		
TH2901		VRH0017	THERMISTOR	1	
			MISCELLANEOUS		
		VMA8089	MAIN HOLDER	1	
		V220065	INSULLATION SHEET	1	
	■	VEP01487H	POWER C.B.A.		(RTL)NV-HD100B
			CAPACITORS		
C1101		ECQU2A154MNB	P.CAPACITOR 250V 0.15U	1	<!>
C1102		ECQU2A104MN	P.CAPACITOR 250V 0.01U	1	<!>
C1103		ECBC2GG680B	CAPACITOR	1	
C1106		VCC0021	C.CAPACITOR	1	<!>
C1107		ECQS6473KF	P.CAPACITOR 50V	1	
C1108		VCK0106K121	CAPACITOR	1	
C1109		ECA1VXLV470	E.CAPACITOR 35V 47U	1	
C1110		ECA1CXLV101	E.CAPACITOR 16V 100U	1	
C1111		ECEA1JFE470	E.CAPACITOR 63V 47U	1	
C1112		ECEA1CFE560	E.CAPACITOR 16V 56U	1	
C1113,14		ECEA1DFZ681	E.CAPACITOR 20V 680U	2	
C1115,16		ECEA1AFZ681X	E.CAPACITOR 10V 680U	2	
C1117		ECQB1H103JF	P.CAPACITOR 50V 0.01U	1	
C1118		ECKF1H102KB	C.CAPACITOR 50V 1000P	1	
C1119		VCF2AAC101J	P.CAPACITOR 100V 100P	1	
C1120		ECKF1H391KB	C.CAPACITOR 50V 390P	1	

Ref.No.		Part No.	Part Name & Description	Pcs	Remarks
C1121		ECKF1H102KB	C.CAPACITOR 50V 1000P	1	
C1133		VCC0021	C.CAPACITOR	1	<!>
C1136		VCC0022	C.CAPACITOR 1000P	1	<!>
			DIODES		
D1102		S1WBA60S	DIODE	1	<!>
D1103		AP01C	DIODE	1	
D1104		MA4200H	DIODE	1	
D1105		MA723VT	DIODE	1	(VT)
D1106		MA178	DIODE	1	
D1107		AU012	DIODE	1	
D1108		MA185	DIODE	1	
D1109		RL4ZPLF	DIODE	1	
D1110		31DQ04	DIODE	1	
D1111		MA165VT	DIODE	1	
			INTEGRATED CIRCUITS		
IC1101		SIRS6545LF	IC	1	<!>
IC1102		SI3120C	IC	1	
IC1103		UPC1093J	IC	1	
			COILS		
L1101		ELF18D221F	COIL 220UH	1	<!>
L1102,03		VLQ0410	COIL	2	
L1104,05		ELESE101KA	COIL 100UH	2	
L1106		VLP0074	COIL	1	
L1107		VLP0083	FILTER	1	
L1111		ELF18D290A	COIL 29UH	1	<!>
L1112-15		VLP0085	FILTER	4	
			CONNECTORS		
P1101		VJS2625	CONNECTOR (FEMALE)	1	<!>
P1102		VJP12S0T	CONNECTOR (MALE) 10P	1	
			PHOTO COUPLERS		
Q1101		PS2561L1V1	PHOTO COUPLER	1	<!>
			RESISTORS		
R1101		ERDS2CKG3001	M.RESISTOR 1/4W 3K	1	
R1102		ERG3SJ683	M.RESISTOR 3W 68K	1	
R1103		ERDS2TJ224	C.RESISTOR 1/4W 220K	1	
R1104		ERDS2FJ221	C.RESISTOR 1/4W 220	1	
R1105		ERDS2TJ101	C.RESISTOR 1/4W 100	1	
R1106		ERDS2TJ561	C.RESISTOR 1/4W 560	1	
R1107		ERW1PK1P5	W.RESISTOR 1W 1.5	1	
R1108		ERDS2TJ561	C.RESISTOR 1/4W 560	1	
R1109		ERDS2TJ271	C.RESISTOR 1/4W 270	1	
R1110		ERDS2CKG2701	M.RESISTOR 1/4W 2.7K	1	
R1111		ERDS2TJ272	C.RESISTOR 1/4W 2.7K	1	
R1112		ERDS2CKG2401	M.RESISTOR 1/4W 2.4K	1	
R1113		ERDS2CKG3302	M.RESISTOR 1/4W 33K	1	
R1114		ERDS2TJ682	C.RESISTOR 1/4W 6.8K	1	
R1115		ERDS2TJ471	C.RESISTOR 1/4W 470	1	
R1116		ERDS2CKG62R0	M.RESISTOR 62	1	
R1117		ERDS2TJ103	C.RESISTOR 1/4W 10K	1	
R1131		ERW1PK2R2	W.RESISTOR 1W 2.2	1	
R1132		ERC12AGM334	S.RESISTOR 1/2W 330K	1	<!>
R1133		ERDS2TJ224	C.RESISTOR 1/4W 220K	1	
			TRANSFORMERS		
T1101		VLT0704	TRANSFORMER	1	<!>
			MISCELLANEOUS		
		VJF0318	FUSE HOLDER	2	<!>

Ref.No.		Part No.	Part Name & Description	Pcs	Remarks
	■	VEP01487K	POWER C.B.A.		(RTL)NV-HD100EB
			CAPACITORS		
C1101		ECQU2A224MN	P.CAPACITOR 250V 0.22U	1	<!>
C1102		ECQU2A104MN	P.CAPACITOR 250V 0.01U	1	<!>
C1103		ECEC2GG680B	CAPACITOR	1	
C1104,05		VCKD046	CAPACITOR	2	<!>
C1106		VCCD024	C.CAPACITOR 2200P	1	<!>
C1107		ECQE6473KF	P.CAPACITOR 50V	1	
C1108		VCKD106K121	CAPACITOR	1	
C1109		ECA1VXLV470	E.CAPACITOR 35V 47U	1	
C1110		ECA1CXLV101	E.CAPACITOR 16V 100U	1	
C1111		ECEA1JFE470	E.CAPACITOR 63V 47U	1	
C1112		ECEA1CFE560	E.CAPACITOR 16V 56U	1	
C1113,14		ECEA1DFZ681	E.CAPACITOR 20V 680U	2	
C1115,16		ECEA1AFZ681X	E.CAPACITOR 10V 680U	2	
C1117		ECQB1H103JF	P.CAPACITOR 50V 0.01U	1	
C1118		ECKF1H102KB	C.CAPACITOR 50V 1000P	1	
C1119		VCF2AAC101J	P.CAPACITOR 100V 100P	1	
C1120		ECKF1H391KB	C.CAPACITOR 50V 390P	1	
C1121		ECKF1H102KB	C.CAPACITOR 50V 1000P	1	
C1131,32		VCKD046	CAPACITOR	2	<!>
C1133		VCCD024	C.CAPACITOR 2200P	1	<!>
C1134,35		VCKD046	CAPACITOR	2	<!>
C1136		VCCD024	C.CAPACITOR 2200P	1	<!>
			DIODES		
D1102		S1WBA60S	DIODE	1	<!>
D1103		AP01C	DIODE	1	
D1104		MA4200H	DIODE	1	
D1105		MA723VT	DIODE	1	(VT)
D1106		MA178	DIODE	1	
D1107		AU012	DIODE	1	
D1108		MA185	DIODE	1	
D1109		RL4ZPLF	DIODE	1	
D1110		31DQ04	DIODE	1	
D1111		MA165VT	DIODE	1	
			INTEGRATED CIRCUITS		
IC1101		STRS6545LF	IC	1	<!>
IC1102		SI3120C	IC	1	
IC1103		UPC1093J	IC	1	
			COILS		
L1101		ELF18D221F	COIL 220UH	1	<!>
L1102,03		VLQ0410	COIL	2	
L1104,05		ELESE101KA	COIL 100UH	2	
L1106		VLP0074	COIL	1	
L1107		VLP0083	FILTER	1	
L1111		ELF18D221F	COIL 220UH	1	<!>
			CONNECTORS		
P1101		VJS262S	CONNECTOR (FEMALE)	1	<!>
P1102		VJP1250T	CONNECTOR (MALE) 10P	1	
			TRANSISTORS		
Q1101		PS2561L1-1	TRANSISTOR-PHOTO COUPLER	1	<!>
			RESISTORS		
R1101		ERQS2CKG3001	M.RESISTOR 1/4W 3K	1	
R1102		ERG3SJ683	M.RESISTOR 3W 68K	1	
R1103		ERDS2TJ224	C.RESISTOR 1/4W 220K	1	
R1104		ERDS2RJ221	C.RESISTOR 1/4W 220	1	

Ref.No.		Part No.	Part Name & Description	Pcs	Remarks
R1105		ERDS2TJ101	C.RESISTOR 1/4W 100	1	
R1106		ERDS2TJ561	C.RESISTOR 1/4W 560	1	
R1107		ERW1PK1R5	W.RESISTOR 1W 1.5	1	
R1108		ERDS2TJ561	C.RESISTOR 1/4W 560	1	
R1109		ERDS2TJ271	C.RESISTOR 1/4W 270	1	
R1110		ERQS2CKG2701	M.RESISTOR 1/4W 2.7K	1	
R1111		ERDS2TJ272	C.RESISTOR 1/4W 2.7K	1	
R1112		ERQS2CKG2401	M.RESISTOR 1/4W 2.4K	1	
R1113		ERQS2CKG3302	M.RESISTOR 1/4W 33K	1	
R1114		ERDS2TJ682	C.RESISTOR 1/4W 6.8K	1	
R1115		ERDS2TJ471	C.RESISTOR 1/4W 470	1	
R1116		ERQS2CKG62R0	M.RESISTOR 62	1	
R1117		ERDS2TJ103	C.RESISTOR 1/4W 10K	1	
R1131		ERW1PKZR2	W.RESISTOR 1W 2.2	1	
R1132		ERC12AGM334	S.RESISTOR 1/2W 330K	1	<!>
R1133		ERDS2TJ224	C.RESISTOR 1/4W 220K	1	
			TRANSFORMERS		
T1101		VLT0704	TRANSFORMER	1	<!>
			MISCELLANEOUS		
		VJF0318	FUSE HOLDER	2	<!>
	■	VEP05176C	HEAD AMP C.B.A.		(RTL)
			CAPACITORS		
C503		ECUM1C105ZFN	C.CAPACITOR 16V 1U	1	
C505-08		ECUM1H103ZFN	C.CAPACITOR CH 50V 0.01U	4	
C509		ECUM1H332KBN	C.CAPACITOR CH 50V 3300P	1	
C510,11		ECUM1H104ZFN	C.CAPACITOR CH 50V 0.1U	2	
C512		ECUM1H102KBN	C.CAPACITOR CH 50V 1000P	1	
C513		ECUM1H104ZFN	C.CAPACITOR CH 50V 0.1U	1	
C514		ECUM1H103ZFN	C.CAPACITOR CH 50V 0.01U	1	
C515,16		ECUM1H104ZFN	C.CAPACITOR CH 50V 0.1U	2	
C517,18		ECUM1H103ZFN	C.CAPACITOR CH 50V 0.01U	2	
C519,20		ECUM1H104ZFN	C.CAPACITOR CH 50V 0.1U	2	
C521		ECUM1H103ZFN	C.CAPACITOR CH 50V 0.01U	1	
C523-25		ECUM1H103ZFN	C.CAPACITOR CH 50V 0.01U	3	
C526		VCEA0JAC221	E.CAPACITOR 6.3V 220U	1	
C527		ECUM1H102KBN	C.CAPACITOR CH 50V 1000P	1	
C540		ECEA1CK470	E.CAPACITOR 16V 47U	1	
C551		ECUM1H102KBN	C.CAPACITOR CH 50V 1000P	1	
C552-54		ECUM1H103ZFN	C.CAPACITOR CH 50V 0.01U	3	
C555		ECEA0JPK221	E.CAPACITOR 6.3V 220U	1	
C556,57		ECUM1H103ZFN	C.CAPACITOR CH 50V 0.01U	2	
C559		ECUM1C105ZFN	C.CAPACITOR 16V 1U	1	
C560,61		ECUM1H471JCN	C.CAPACITOR 50V 470P	2	
C562,63		ECUM1H101JCN	C.CAPACITOR CH 50V 100P	2	
C564		ECUM1C105ZFN	C.CAPACITOR 16V 1U	1	
C565		ECUM1H101JCN	C.CAPACITOR CH 50V 100P	1	
C566		ECUM1H104ZFN	C.CAPACITOR CH 50V 0.1U	1	
C567		ECUM1H102KBN	C.CAPACITOR CH 50V 1000P	1	
C569		ECUM1C105ZFN	C.CAPACITOR 16V 1U	1	
			INTEGRATED CIRCUITS		
IC501		AN3336SB	IC	1	
IC551		BA7743FS	IC	1	
			COILS		
L501,02		VLQ0540K330	COIL 33UH	2	
L551,52		VLQ0540K330	COIL 33UH	2	

Ref.No.		Part No.	Part Name & Description	Pcs	Remarks
			CONNECTORS		
PS01		VJS3193B020A	CONNECTOR (FEMALE)	1	
P502		VJS2603	CONNECTOR (FEMALE)	1	
			COMBINATION PARTS		
QR501		MRN2404	TRANSISTOR-RESISTOR	1	
			RESISTORS		
R501		ERJ6GMYJ101	M.RESISTOR 1/10W 100	1	
R502		ERJ6GEYJ152	M.RESISTOR CH 1/10W 1.5K	1	
R503		ERJ6GMYG752	M.RESISTOR CH 1/10W 7.5K	1	
R504		ERJ6GMYJ333	M.RESISTOR CH 1/10W 33K	1	
R505		ERJ6GMYJ182	M.RESISTOR CH 1/10W 1.8K	1	
R506		ERJ6GMYJ392	M.RESISTOR CH 1/10W 3.9K	1	
R507		ERJ6GMYJ391	M.RESISTOR CH 1/10W 390	1	
R508		ERJ6GMYJ331	M.RESISTOR CH 1/10W 330	1	
R509-12		ERJ6GMYJ101	M.RESISTOR 1/10W 100	4	
R513		ERJ6GMYJ103	M.RESISTOR CH 1/10W 10K	1	
R514		ERJ6GMYJ274	M.RESISTOR CH 1/10W 270K	1	
R517		ERJ6GMYJ100	M.RESISTOR 1/10W 10	1	
R526		ERJ6GMYG133	M.RESISTOR CH 1/10W 13K	1	
R551		ERJ6GMYJ473	M.RESISTOR CH 1/10W 47K	1	
R552		ERJ6GMYJ391	M.RESISTOR CH 1/10W 390	1	
R553		ERJ6GMYJ273	M.RESISTOR CH 1/10W 27K	1	
R554		ERJ6GMYJ243	M.RESISTOR CH 1/10W 24K	1	
R556		ERJ6GMYJ333	M.RESISTOR CH 1/10W 33K	1	
R557		ERJ6GMYJ103	M.RESISTOR CH 1/10W 10K	1	
R558		ERJ6GMYJ332	M.RESISTOR CH 1/10W 3.3K	1	
R559,60		ERJ6GMYJ152	M.RESISTOR CH 1/10W 1.5K	2	
R561		ERJ6GMYJ332	M.RESISTOR CH 1/10W 3.3K	1	
R562		ERJ6GMYJ102	M.RESISTOR CH 1/10W 1K	1	
R563		VRE0034E100	M.RESISTOR CH 1/10W 10	1	
R564		ERJ6GMYJ224	M.RESISTOR CH 1/10W 220K	1	
R565		ERJ6GMYJ473	M.RESISTOR CH 1/10W 47K	1	
R566		ERJ6GMYJ273	M.RESISTOR CH 1/10W 27K	1	
R567		ERJ6GMYJ153	M.RESISTOR CH 1/10W 15K	1	
R568		ERJ6GMYJ271	M.RESISTOR CH 1/10W 270	1	
R569		ERJ6GEYJ102	M.RESISTOR CH 1/10W 1K	1	
R570		ERJ6GMYJ102	M.RESISTOR CH 1/10W 1K	1	
			MISCELLANEOUS		
		VSC3714	SHIELD COVER (TOP)	1	
		VSC3478	SHIELD COVER (MAIN)	1	
		VSC3715	SHIELD COVER (BOTTOM)	1	
	■	VEP07703E	TIMER C.B.A.		(RTL)NV-HD100B
					SUPPLIED FROM M.B.V.
			CAPACITORS		
C1701		ECEA1CK101	E.CAPACITOR 16V 100U	1	
C1702		ECUM1H103ZFN	C.CAPACITOR CH 50V 0.01U	1	
C1703		ECKD2H471KB	C.CAPACITOR 500V 470P	1	
C1704		ECEA1VK220	E.CAPACITOR 35V 22U	1	
C1705		ECKF1H103ZF	C.CAPACITOR 50V 0.01U	1	
C1706		ECUM1H1042FN	C.CAPACITOR CH 50V 0.1U	1	
C7501		ECRHA030ES4R	CAPACITOR	1	
C7502		ECEA0JKS330	E.CAPACITOR 6.3V 33U	1	
C7503		ECUM1H1042FN	C.CAPACITOR CH 50V 0.1U	1	
C7504		ECUM1H223KBN	C.CAPACITOR CH 50V 0.022U	1	
C7505,06		ECEA1EKS4R7	E.CAPACITOR 25V 4.7U	2	
C7507,08		ECUM1H4732FN	C.CAPACITOR CH 50V 0.047U	2	
C7509		ECEA1HK220	E.CAPACITOR 50V 22U	1	
C7510		ECUM1H104ZFN	C.CAPACITOR CH 50V 0.1U	1	
C7511		ECUM1H060DCN	C.CAPACITOR CH 50V 6P	1	
C7513,14		ECUM1H220JCN	C.CAPACITOR CH 50V 22P	2	

Ref.No.		Part No.	Part Name & Description	Pcs	Remarks
C7515		ECUM1H104ZFN	C.CAPACITOR CH 50V 0.1U	1	
C7517		ECUM1H104ZFN	C.CAPACITOR CH 50V 0.1U	1	
C7518		ECUM1H821JCN	C.CAPACITOR CH 50V 820P	1	
C7519		ECUM1H221JCN	C.CAPACITOR CH 50V 220P	1	
C7520		ECEA0JKS470	E.CAPACITOR 6.3V 47U	1	
C7521		ECUM1H103ZFN	C.CAPACITOR CH 50V 0.01U	1	
C7522		ECEA0JKS470	E.CAPACITOR 6.3V 47U	1	
C7523		ECUM1H271JCN	C.CAPACITOR CH 50V 270P	1	
C7524		ECUM1H101JCN	C.CAPACITOR CH 50V 100P	1	
C7530		ECQB1H103JZ	P.CAPACITOR 50V 0.01U	1	
C7701		ECUM1H102KBN	C.CAPACITOR CH 50V 1000P	1	
C7702		ECUM1H680JCN	C.CAPACITOR CH 50V 68P	1	
C7703		ECEA1APK330	E.CAPACITOR 10V 33U	1	
C7704		ECEA1EPK3R3	E.CAPACITOR 25V 3.3U	1	
C7705		ECEA1CPK330	E.CAPACITOR 16V 33U	1	
C7706,07		ECUM1H104ZFN	C.CAPACITOR CH 50V 0.1U	2	
C7709		ECUM1C105ZFN	C.CAPACITOR 16V 1U	1	
			DIODES		
D1701		MA1270-H	DIODE	1	
D1702		MA185	DIODE	1	
D7501		MA3075	DIODE	1	
D7502		MA221	DIODE	1	
D7504		LN081609P	LED	1	
D7512-15		MA221	DIODE	4	
D7517-19		MA221	DIODE	3	
D7552		MA221	DIODE	1	
D7555		MA221	DIODE	1	
D7558		MA221	DIODE	1	
D7563		MA221	DIODE	1	
D7570-72		MA221	DIODE	3	
D7580		MA221	DIODE	1	
D7701-04		MA221	DIODE	4	
D7706-08		LN28RCPPV	DIODE	3	
D7709		MA221	DIODE	1	
			DISPLAY TUBES		
DP7501		VSL0276	DISPLAY TUBE	1	
			INTEGRATED CIRCUITS		
IC7501		MN187164VTSV	IC	1	
IC7502		PST7026	IC	1	
IC7503		XLJ9021B	IC	1	
IC7504		PST7043	IC	1	
IC7505		BA6810S	IC	1	
IC7701		BA3308	IC	1	
IR7501		VEK6407	IR RECEIVER UNIT	1	
			JACKS		
J4801		VJJ0281	MIC JACK	1	
			COILS		
L1701		VLQEL05F101K	COIL 100UH	1	
L7501		VLQEL05F151K	COIL 150UH	1	
			CONNECTORS		
P7501		VJS3193B012A	CONNECTOR (FEMALE)	1	
P7502		VJS3193B024A	CONNECTOR (FEMALE)	1	
P7701		VJS3301	CONNECTOR (FEMALE)	1	
P7702		VJP1244T	CONNECTOR (MALE) 4P	1	
			CONNECTORS		
PP7501		VJP3405A013W	CONNECTOR (MALE)	1	
PP7703		VJP3042A004W	CONNECTOR (MALE)	1	

Ref.No.		Part No.	Part Name & Description	Pcs	Remarks
PS4801		VJS3042B004W	CONNECTOR (FEMALE)	1	
			TRANSISTORS		
Q1701		2SD973A-R.VT	TRANSISTOR	1	
Q7501,02		MSD601	TRANSISTOR-RESISTOR	2	
			COMBINATION PARTS		
QR7501,02		MRN2403	TRANSISTOR-RESISTOR	2	
QR7504		XN4311	TRANSISTOR-RESISTOR	1	
QR7509		MRN1404	TRANSISTOR-RESISTOR	1	
QR7701-04		MRN2404	TRANSISTOR-RESISTOR	4	
			RESISTORS		
R1701		ERJ6GMYJ332	M.RESISTOR CH 1/10W 3.3K	1	
R1702		ERDS2TJ471	C.RESISTOR 1/4W 470	1	
R1703		ERJ6GMYJ101	M.RESISTOR 1/10W 100	1	
R7501,02		ERJ6GMYJ820	M.RESISTOR CH 1/10W 82	2	
R7503		ERJ6GMYG223	M.RESISTOR CH 1/10W 22K	1	
R7504		ERJ6GMYJ102	M.RESISTOR CH 1/10W 1K	1	
R7505-07		ERJ6GMYJ473	M.RESISTOR CH 1/10W 47K	3	
R7508		ERJ6GMYJ272	M.RESISTOR CH 1/10W 2.7K	1	
R7510-13		ERJ6GMYJ102	M.RESISTOR CH 1/10W 1K	4	
R7514		ERJ6GMYJ182	M.RESISTOR CH 1/10W 1.8K	1	
R7515-18		ERJ6GMYJ821	M.RESISTOR CH 1/10W 820	4	
R7519		ERJ6GMYJ182	M.RESISTOR CH 1/10W 1.8K	1	
R7520		ERJ6GMYJ101	M.RESISTOR 1/10W 100	1	
R7521		ERJ6GMYJ221	M.RESISTOR CH 1/10W 220	1	
R7522		ERJ6GMYJ104	M.RESISTOR CH 1/10W 100K	1	
R7524		ERJ6GMYJ471	M.RESISTOR CH 1/10W 470	1	
R7526		ERJ6GMYJ224	M.RESISTOR CH 1/10W 220K	1	
R7527,28		ERJ6GMYJ223	M.RESISTOR CH 1/10W 22K	2	
R7529		ERJ6GMYJ221	M.RESISTOR CH 1/10W 220	1	
R7531,32		ERJ6GMYJ221	M.RESISTOR CH 1/10W 220	2	
R7534-37		ERJ6GMYJ332	M.RESISTOR CH 1/10W 3.3K	4	
R7538,39		ERJ6GMYJ103	M.RESISTOR CH 1/10W 10K	2	
R7540-43		ERJ6GMYJ221	M.RESISTOR CH 1/10W 220	4	
R7546		ERJ6GMYJ332	M.RESISTOR CH 1/10W 3.3K	1	
R7550		ERJ6GMYJ272	M.RESISTOR CH 1/10W 2.7K	1	
R7551		ERJ6GMYJ392	M.RESISTOR CH 1/10W 3.9K	1	
R7553-56		ERJ6GMYJ222	M.RESISTOR CH 1/10W 2.2K	4	
R7557		ERJ6GMYJ332	M.RESISTOR CH 1/10W 3.3K	1	
R7703		ERJ6GMYJ222	M.RESISTOR CH 1/10W 2.2K	1	
R7704		ERJ6GMYJ473	M.RESISTOR CH 1/10W 47K	1	
R7705		ERJ6GMYJ680	M.RESISTOR CH 1/10W 68	1	
R7706		ERJ6GMYJ472	M.RESISTOR CH 1/10W 4.7K	1	
R7707		ERJ6GMYJ564	M.RESISTOR CH 1/10W 560K	1	
R7708		ERJ6GMYJ473	M.RESISTOR CH 1/10W 47K	1	
			COMBINATION PARTS		
RX7501,02		EXBF6E104J	RESISTOR-RESISTOR	2	
RX7503		EXBF8E104J	COMBI.R-R	1	
			SWITCHES		
SW7501-11		EVQ11409K	SWITCH	11	
SW7701		EVQ11409K	SWITCH	1	
			TRANSFORMERS		
T1701		ETE13K80AY	TRANSFORMER	1	
			VARIABLE RESISTORS		
VR4004		EVNCBAA00B53	V.RESISTOR	1	
			CRYSTAL OSCILLATORS		
X7501		VSX0484	CRYSTAL OSCILLATOR	1	
X7502		VSX0094	CRYSTAL OSCILLATOR	1	

Ref.No.		Part No.	Part Name & Description	Pcs	Remarks
			MISCELLANEOUS		
		VJF1043	FIP HOLDER	1	
		VMD2074	LED HOLDER	1	
		VMD2035	JOG HOLDER	1	
		VSQ0822	JOG SHUTTLE ENCODER	1	
		VSC3883	SHIELD COVER	1	FOR MIC C.B.A.
	■	VEP07703F	TIMER C.B.A.		(RTL)NV-HD100EB
			CAPACITORS		
C1701		ECEA1CK101	E.CAPACITOR 16V 100U	1	
C1702		ECUM1H103ZFN	C.CAPACITOR CH 50V 0.01U	1	
C1703		ECKD2H471KB	C.CAPACITOR 500V 470P	1	
C1704		ECEA1VK220	E.CAPACITOR 35V 22U	1	
C1705		ECKF1H1032F	C.CAPACITOR 50V 0.01U	1	
C1706		ECUM1H104ZFN	C.CAPACITOR CH 50V 0.1U	1	
C7501		ECRHA030E54R	CAPACITOR	1	
C7502		ECEA0JKS330	E.CAPACITOR 6.3V 33U	1	
C7503		ECUM1H104ZFN	C.CAPACITOR CH 50V 0.1U	1	
C7504		ECUM1H223KBN	C.CAPACITOR CH 50V 0.022U	1	
C7505,06		ECEA1EKS4R7	E.CAPACITOR 25V 4.7U	2	
C7507,08		ECUM1H473ZFN	C.CAPACITOR CH 50V 0.047U	2	
C7509		ECEA1HK220	E.CAPACITOR 50V 22U	1	
C7510		ECUM1H104ZFN	C.CAPACITOR CH 50V 0.1U	1	
C7511		ECUM1H060DCN	C.CAPACITOR CH 50V 6P	1	
C7513,14		ECUM1H220JCN	C.CAPACITOR CH 50V 22P	2	
C7515		ECUM1H104ZFN	C.CAPACITOR CH 50V 0.1U	1	
C7517		ECUM1H104ZFN	C.CAPACITOR CH 50V 0.1U	1	
C7518		ECUM1H821JCN	C.CAPACITOR CH 50V 820P	1	
C7519		ECUM1H560JCN	C.CAPACITOR CH 50V 56P	1	
C7520		ECEA0JKS470	E.CAPACITOR 6.3V 47U	1	
C7521		ECUM1H103ZFN	C.CAPACITOR CH 50V 0.01U	1	
C7522		ECEA0JKS470	E.CAPACITOR 6.3V 47U	1	
C7523		ECUM1H271JCN	C.CAPACITOR CH 50V 270P	1	
C7524		ECUM1H101JCN	C.CAPACITOR CH 50V 100P	1	
C7530		ECQB1H103JZ	P.CAPACITOR 50V 0.01U	1	
C7701		ECUM1H102KBN	C.CAPACITOR CH 50V 1000P	1	
C7702		ECUM1H680JCN	C.CAPACITOR CH 50V 68P	1	
C7703		ECEA1APK330	E.CAPACITOR 10V 33U	1	
C7704		ECEA1EPK3R3	E.CAPACITOR 25V 3.3U	1	
C7705		ECEA1CPK330	E.CAPACITOR 16V 33U	1	
C7706,07		ECUM1H104ZFN	C.CAPACITOR CH 50V 0.1U	2	
C7709		ECUM1C105ZFN	C.CAPACITOR 16V 1U	1	
			DIODES		
D1701		MA1270-H	DIODE	1	
D1702		MA185	DIODE	1	
D7501		MA3075	DIODE	1	
D7502		MA221	DIODE	1	
D7504		LN081609P	LED	1	
D7512-15		MA221	DIODE	4	
D7517-19		MA221	DIODE	3	
D7552,53		MA221	DIODE	2	
D7555		MA221	DIODE	1	
D7557		MA221	DIODE	1	
D7563		MA221	DIODE	1	
D7568		MA221	DIODE	1	
D7571,72		MA221	DIODE	2	
D7580,81		MA221	DIODE	2	
D7701-04		MA221	DIODE	4	
D7706-08		LN28RCPPV	DIODE	3	
D7709		MA221	DIODE	1	
			DISPLAY TUBES		

Ref.No.		Part No.	Part Name & Description	Pcs	Remarks
DF7501		VSL0276	DISPLAY TUBE	1	
			INTEGRATED CIRCUITS		
IC7501		MN187164VTSV	IC	1	
IC7502		PST7026	IC	1	
IC7503		XLJ9021B	IC	1	
IC7504		PST7043	IC	1	
IC7505		BA6810S	IC	1	
IC7701		BA3308	IC	1	
IR7501		VEK6407	IR RECEIVER UNIT	1	
			JACKS		
J4801		VJJ0281	MIC JACK	1	
			COILS		
L1701		VLQEL05F101K	COIL 100UH	1	
L7501		VLQEL05F151K	COIL 150UH	1	
			CONNECTORS		
P7501		VJS3193B012A	CONNECTOR (FEMALE)	1	
P7502		VJS3193B024A	CONNECTOR (FEMALE)	1	
P7701		VJS3301	CONNECTOR (FEMALE)	1	
P7702		VJP1244T	CONNECTOR (MALE) 4P	1	
PP7501		VJP3405A013W	CONNECTOR (MALE)	1	
PP7703		VJP3042A004W	CONNECTOR (MALE)	1	
PS4801		VJS3042B004W	CONNECTOR (FEMALE)	1	
			TRANSISTORS		
Q1701		2SD973A-R.VT	TRANSISTOR	1	
Q7501,02		MSD601	TRANSISTOR-RESISTOR	2	
			COMBINATION PARTS		
QR7501,02		MRN2403	TRANSISTOR-RESISTOR	2	
QR7504		XN4311	TRANSISTOR-RESISTOR	1	
QR7509		MRN1404	TRANSISTOR-RESISTOR	1	
QR7701-04		MRN2404	TRANSISTOR-RESISTOR	4	
			RESISTORS		
R1701		ERJ6GMYJ332	M.RESISTOR CH 1/10W 3.3K	1	
R1702		ERDS2TJ471	C.RESISTOR 1/4W 470	1	
R1703		ERJ6GMYJ101	M.RESISTOR 1/10W 100	1	
R7501,02		ERJ6GMYJ820	M.RESISTOR CH 1/10W 82	2	
R7503		ERJ6GMYG223	M.RESISTOR CH 1/10W 22K	1	
R7504		ERJ6GMYJ102	M.RESISTOR CH 1/10W 1K	1	
R7505-07		ERJ6GMYJ473	M.RESISTOR CH 1/10W 47K	3	
R7508		ERJ6GMYJ272	M.RESISTOR CH 1/10W 2.7K	1	
R7510-13		ERJ6GMYJ102	M.RESISTOR CH 1/10W 1K	4	
R7514		ERJ6GMYJ182	M.RESISTOR CH 1/10W 1.8K	1	
R7515-18		ERJ6GMYJ821	M.RESISTOR CH 1/10W 820	4	
R7519		ERJ6GMYJ182	M.RESISTOR CH 1/10W 1.8K	1	
R7520		ERJ6GMYJ101	M.RESISTOR 1/10W 100	1	
R7521		ERJ6GMYJ221	M.RESISTOR CH 1/10W 220	1	
R7522		ERJ6GMYJ104	M.RESISTOR CH 1/10W 100K	1	
R7524		ERJ6GMYJ471	M.RESISTOR CH 1/10W 470	1	
R7526		ERJ6GMYJ224	M.RESISTOR CH 1/10W 220K	1	
R7527,28		ERJ6GMYJ223	M.RESISTOR CH 1/10W 22K	2	
R7529		ERJ6GMYJ221	M.RESISTOR CH 1/10W 220	1	
R7531,32		ERJ6GMYJ221	M.RESISTOR CH 1/10W 220	2	
R7533-37		ERJ6GMYJ332	M.RESISTOR CH 1/10W 3.3K	5	
R7538,39		ERJ6GMYJ103	M.RESISTOR CH 1/10W 10K	2	
R7540-44		ERJ6GMYJ221	M.RESISTOR CH 1/10W 220	5	

Ref.No.		Part No.	Part Name & Description	Pcs	Remarks
R7546		ERJ6GMYJ332	M.RESISTOR CH 1/10W 3.3K	1	
R7550		ERJ6GMYJ272	M.RESISTOR CH 1/10W 2.7K	1	
R7551		ERJ6GMYJ392	M.RESISTOR CH 1/10W 3.9K	1	
R7553-56		ERJ6GMYJ222	M.RESISTOR CH 1/10W 2.2K	4	
R7557		ERJ6GMYJ332	M.RESISTOR CH 1/10W 3.3K	1	
R7703		ERJ6GMYJ222	M.RESISTOR CH 1/10W 2.2K	1	
R7704		ERJ6GMYJ473	M.RESISTOR CH 1/10W 47K	1	
R7705		ERJ6GMYJ680	M.RESISTOR CH 1/10W 68	1	
R7706		ERJ6GMYJ472	M.RESISTOR CH 1/10W 4.7K	1	
R7707		ERJ6GMYJ564	M.RESISTOR CH 1/10W 560K	1	
R7708		ERJ6GMYJ473	M.RESISTOR CH 1/10W 47K	1	
			COMBINATION PARTS		
RX7501,02		EXBF6E104J	RESISTOR-RESISTOR	2	
RX7503		EXBF8E104J	COMBI.R-R	1	
			SWITCHES		
SW7501-11		EVQ11409K	SWITCH	11	
SW7701		EVQ11409K	SWITCH	1	
			TRANSFORMERS		
T1701		ETE13K80AY	TRANSFORMER	1	
			VARIABLE RESISTORS		
VR4004		EVNCBAA00B53	V.RESISTOR	1	
			CRYSTAL OSCILLATORS		
X7501		VSX0484	CRYSTAL OSCILLATOR	1	
X7502		VSX0094	CRYSTAL OSCILLATOR	1	
			MISCELLANEOUS		
		VJF1043	FIP HOLDER	1	
		VMD2074	LED HOLDER	1	
		VMD2035	JOG HOLDER	1	
		VSQ0822	JOG SHUTTLE ENCODER	1	
		VSC3883	SHIELD COVER	1	FOR MIC C.B.A.
	■	VEP06852G	OPERATION C.B.A.		(RTL)NV-HD100B
			CAPACITORS		
C6501		ECJ1H104ZFN	C.CAPACITOR CH 50V 0.1U	1	
			DIODES		
D6505-07		1SS254	DIODE	3	
D6510		1SS254	DIODE	1	
			CONNECTORS		
P6501		VJP1252T	CONNECTOR (MALE) 12P	1	
PS6501		VJS3405A013A	CONNECTOR (FEMALE)	1	
			RESISTORS		
R6503		VRD0034E162	M.RESISTOR CH 1/10W 1.6K	1	
R6504		ERJ6GMYG241	M.RESISTOR CH 1/10W 240	1	
R6505		ERJ6GMYG680	M.RESISTOR CH 1/10W 68	1	
R6511		ERJ6GM20R00	M.RESISTOR CH 1/10W 0	1	

Ref.No.		Part No.	Part Name & Description	Pcs	Remarks
			SWITCHES		
SW6501,02		EVQ11409K	SWITCH	2	
SW6504,05		EVQ11409K	SWITCH	2	
SW6506-09		ESD170206	SWITCH	4	
			VARIABLE RESISTORS		
VR6501		EVUF3AE20B24	V.RESISTOR 20K	1	
VR6502		EVJ021E2054J	V.RESISTOR	1	
			MISCELLANEOUS		
		VGU5531	SWITCH KNOB	4	
		VMZ2145	BARRIER	1	
	■	VEP06852P	OPERATION C.B.A.		(RTL)NV-HD100EB
			CAPACITORS		
C6501		ECUM1H104ZFN	C.CAPACITOR CH 50V 0.1U	1	
			DIODES		
D6505-07		1SS254	DIODE	3	
D6509,10		1SS254	DIODE	2	
			CONNECTORS		
P6501		VJP1252T	CONNECTOR (MALE) 12P	1	
PS6501		VJS3405A013A	CONNECTOR (FEMALE)	1	
			RESISTORS		
R6503		VRB0034E162	M.RESISTOR CH 1/10W 1.6K	1	
R6504		ERJ6GMYG241	M.RESISTOR CH 1/10W 240	1	
R6505		ERJ6GMYG680	M.RESISTOR CH 1/10W 68	1	
R6511		ERJ6GMZOR00	M.RESISTOR CH 1/10W 0	1	
			SWITCHES		
SW6501-05		EVQ11409K	SWITCH	5	
SW6507-09		ESD170206	SWITCH	3	
			VARIABLE RESISTORS		
VR6501		EVUF3AE20B24	V.RESISTOR 20K	1	
VR6502		EVJ021E2054J	V.RESISTOR	1	
			MISCELLANEOUS		
		VGU5531	SWITCH KNOB	3	
		VMZ2145	BARRIER	1	
	■	————	MECHANISM CONNECTION C.B.A.		(RTL)
			DIODES		
D1501		1N59L.VT	DIODE	1	

Ref.No.		Part No.	Part Name & Description	Pcs	Remarks
			INTEGRATED CIRCUITS		
IC1501,02		ON1387	IC	2	
			CONNECTORS		
P1503		VJS3316A002	CONNECTOR (FEMALE)	1	
P1504		VJS3317A004	CONNECTOR (FEMALE)	1	
P1505		VJS3193B013A	CONNECTOR (FEMALE)	1	
			TRANSISTORS		
Q1501,02		PN205L-NC.VT	TRANSISTOR	2	
			SWITCHES		
SW1501		VES0695	SAFETY SWITCH	1	
			MISCELLANEOUS		
		VMD2029	REEL GUIDE	1	
	■	VEP00T02A	FE HEAD C.B.A.		(RTL)
			CAPACITORS		
C1401		ECEA1CKA100	E.CAPACITOR 16V 10U	1	
C1402		ECQB1H472JH	P.CAPACITOR 50V 4700P	1	
C1403		ECQB1H333KH	P.CAPACITOR 50V 0.033U	1	
C1404		ECKF1H103ZF	C.CAPACITOR 50V 0.01U	1	
			COILS		
L1401		ELESQ101KA	COIL 100UH	1	
			CONNECTORS		
P1509		VJP1148	CONNECTOR (MALE) 2P	1	
P1512		VJS3070T	CONNECTOR (FEMALE)	1	
			TRANSISTORS		
Q1401		2SC3311	TRANSISTOR	1	
			RESISTORS		
R1401		ERDS2TJ333	C.RESISTOR 1/4W 33K	1	
			TRANSFORMERS		
T1401		EIQ7QF012Q	I.F. TRANSFORMER	1	
	■	————	MOTOR C.B.A.		(RTL)
			MISCELLANEOUS		
		VJP3316B002	CONNECTOR (MALE)	1	

Ref.No.		Part No.	Part Name & Description	Pcs	Remarks
	■	VEP00S86A	POWER TRANSISTOR C.B.A.		(RTL)
			CONNECTORS		
P1506		VJP1230T	CONNECTOR (MALE) 3P	1	
			TRANSISTORS		
Q1503		2SB941QBB	TRANSISTOR	1	

INTERNAL REFERENCE CODES

NOTE: This chart is only for internal reference.
Do not order any parts according to these codes.

P. C. B.	FILM CODE
MAIN	HOTM01-03977
TIMER	HOTM02-07703
LUMINANNCE & CHROMINANCE	HOTM00-03975
POWER	HOTM02-01487
INPUT & OUTPUT	HOTM01-03985
TV DEMODULATOR(NV-HD100B)	HOTM00-07680
TV DEMODULATOR(NV-HD100EB)	HOTM00-07684
HEAD AMP	HOTM04-05176
HI-FI AUDIO	HOTM06-04361
OPERATION	HOTM00-06852
MIC JACK	HOTM01-00S82
NICAM DECODER	HOTM00-07675
FE HEAD	HOTM00-00T02
POWER TRANSISTER	HOTM00-00S86
CYLINDER DRIVE	HOTM00-00R99
MECHANISM CONNECTION	HOTM01-00S63
LOADING MOTOR	HOTM00-00S75

Panasonic

MATSUSHITA ELECTRIC

Printed in Japan

ORDER NO. VSD9402M632

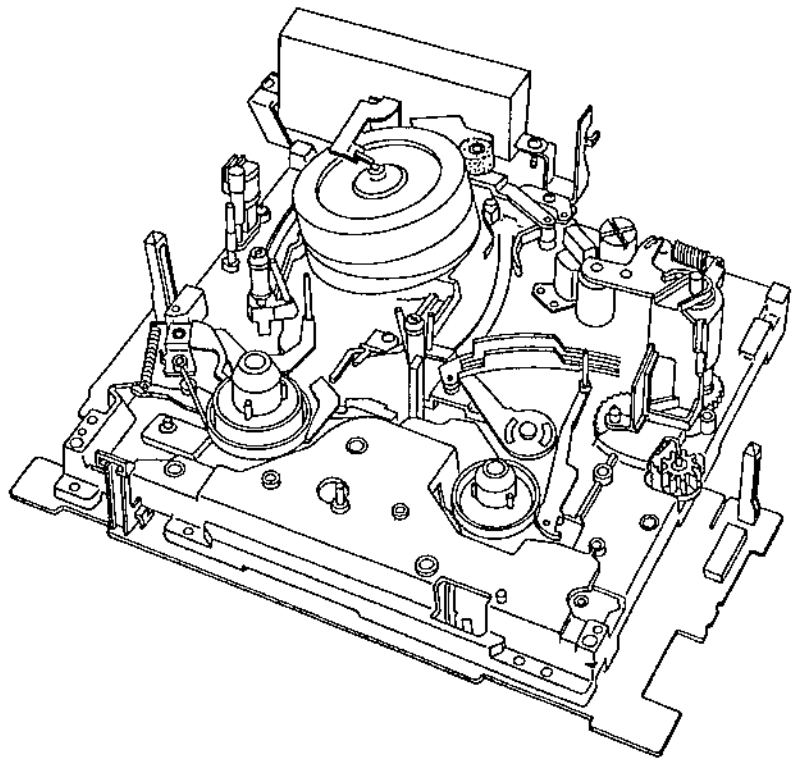
Service Manual

Sec. 1 General Information
Sec. 2 Maintenance Procedures
Sec. 3 Mechanical Adjustment Procedur
Sec. 4 Assembly & Phase Adjustment Procedure

Video Cassette Recorder

VHS
PAL

K-MECHANISM



IMPORTANT

The **K-MECHANISM** chassis are built in several Panasonic SVHS/VHS Video Cassette Recorder.

Thus, Properly file this service manual with the service manual of the relative video cassette recorder.

Panasonic

INTRODUCTION

This Service Manual contains the technical information which service personnel to understand and service the K-Mechanism.
The Maintenance Chart, Mechanical Parts List and Mechanical Specification, please refer to the service manual of each model.

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SECTION 1
GENERAL INFORMATION

The K mechanism maintains the same high performance as G2 mechanism but with a smaller quantity of mounted parts, 40% less than G2 mechanism.

1-1. FEATURE of K MECHANISM

1-1-1. Parts Reduction

<K Mechanism>

a. Reduction in the number of drive parts through the use of a single motor to perform front loading and unit loading.
b. Direct drive of brakes and loading gears with the multi-function main lever.
c. Elimination of sub lever and solenoids.

<Front Loading Unit>

a. Elimination of a slide switch, to reduce wiring.
b. Elimination or combining the joint parts.
c. Smaller and thinner the top plate and rack parts.

1-1-2. No Adjustment of the following is required.

a. Take-up inclined position.
b. P5 Post height.

1-1-3. Reduced Gear Phase Position Alignments

The K Mechanism has only 6 gear phase alignment positions and G2 mechanism has 12 gear phase alignment positions.

1-2. OPERATION of K-MECHANISM

The K mechanism has two motors, the loading motor and capstan motor. The loading motor operates the front loading/unloading and tape loading/unloading. The capstan motor operates each mode.
The bottom C.B.A. connects the mechanism to the system control circuit. On the bottom C.B.A. there are take-up and supply photo-sensors, Sensor LED, Mode Switch Connector, Safety Tab Switch, Supply and Take-up Reel Sensors and Loading Motor Connector. All sensor information sent to the system control circuit.

1-3. EMERGENCY CASSETTE REMOVAL

If the electrical circuit is defective and the action of unloading and front unloading do not work properly, it is possible to removing cassette manually.
There are 2 methods of removing the cassette.

A. Battery Operation

1. Remove the bottom plate.
2. Connect the battery (Manganese-Type (AA)(R6) 3pcs./+4.5V) to P1503 as shown in Fig.G1.
3. After moving the loading post to the unloaded position, disconnect the battery to stop the loading motor.
4. Turn the capstan rotor clockwise to take up the tape.
5. Reconnect the battery to eject the cassette.

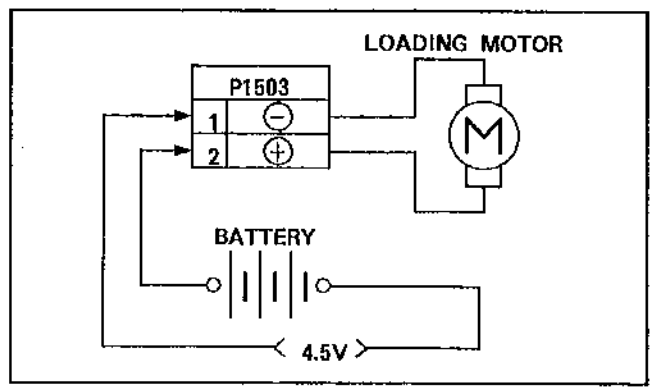


Fig.G1

B. Hand Operation

1. Remove the bottom plate.
2. Turn the worm gear to arrow mark direction (A) by finger as shown in Fig.G2 until loading post move to unloading position.
3. Turn the capstan rotor clockwise (B) to take up the tape.
4. Turn the worm gear again to eject the cassette.

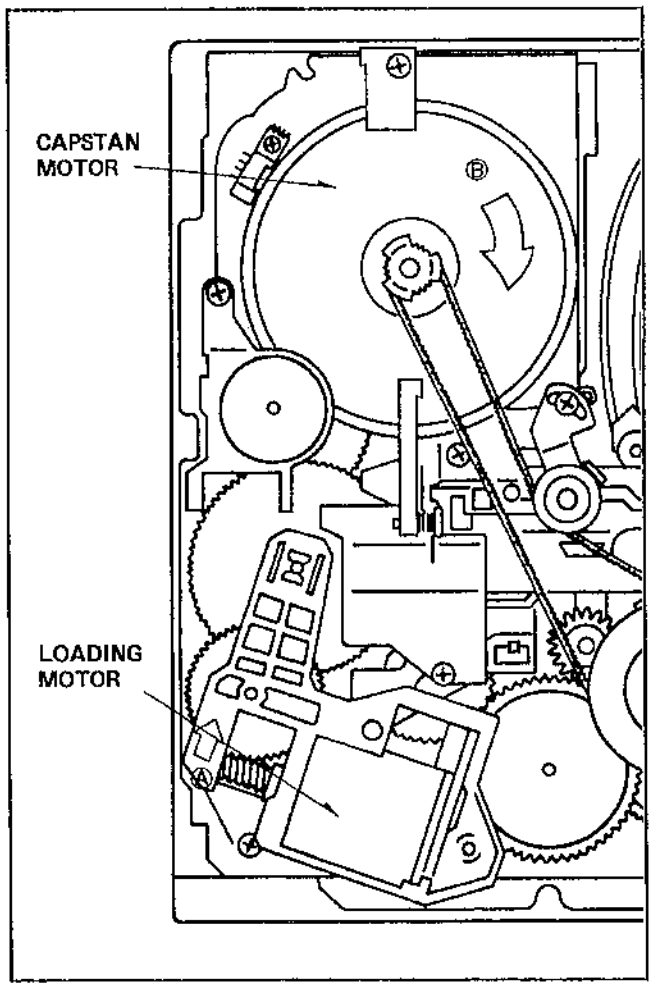


Fig.G2

1-4. EJECT OPERATION

The main cam gear rotates in the direction of the arrow. The projection (B) of the carriage connection gear engages with the recession (A) of the main cam gear. The carriage connection gear rotates in the direction of the arrow to perform the Eject operation.

If the Eject operation is performed without the cassette installed while repairing or making the mechanical phase alignment, the main cam gear will not rotate. For performing the Eject operation with the cassette carriage not installed, it is necessary to rotate the carriage connection gear by hand in the direction of the arrow.

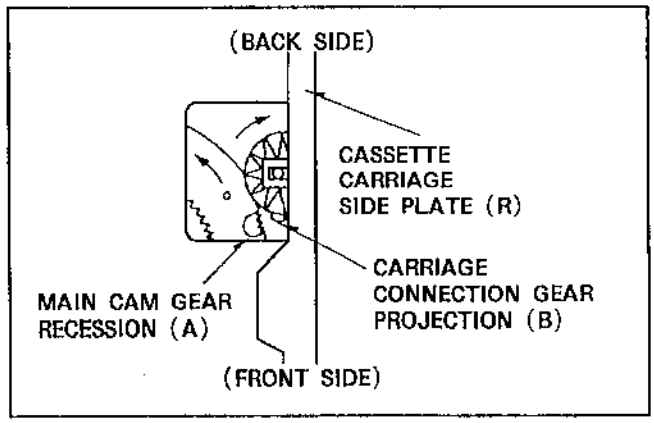


Fig.G3

1-5. REMOVAL of MECHANISM

1-5-1. Removal of Top Plate

1. Unscrew 2 screws (A) and unlock 4 locking tabs to arrow direction as shown in Fig.G4.
2. Lift up the Top Plate.

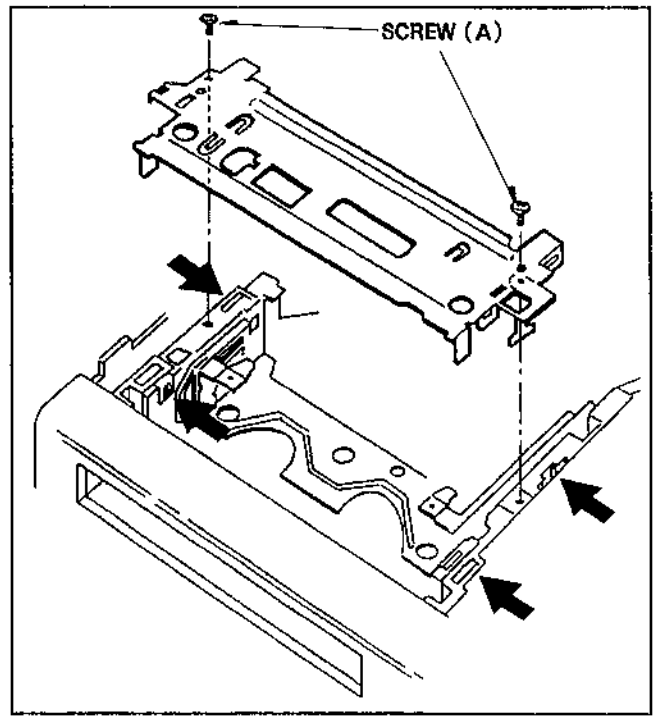


Fig.G4

1-5-2. Removal of Mechanism Chassis

1. Unscrew 2 screws (A) push the Holder Plate slightly to rear of the mechanism.
2. Unscrew a screw (B).
3. Disconnect all cable and connectors on the mechanism chassis.
   1)FE Head connector
   2)A/C Head connector
   3)Power Transistor connector
   4)Head Amp connector
   5)Capstan cable
4. Disconnect a Dew Sensor connector on the MAIN C.B.A.
5. Lift the mechanism chassis slightly and disconnect a connector of Cylinder Motor and a cable of Mechanism Connection C.B.A.
   Then mechanism chassis out of the unit.

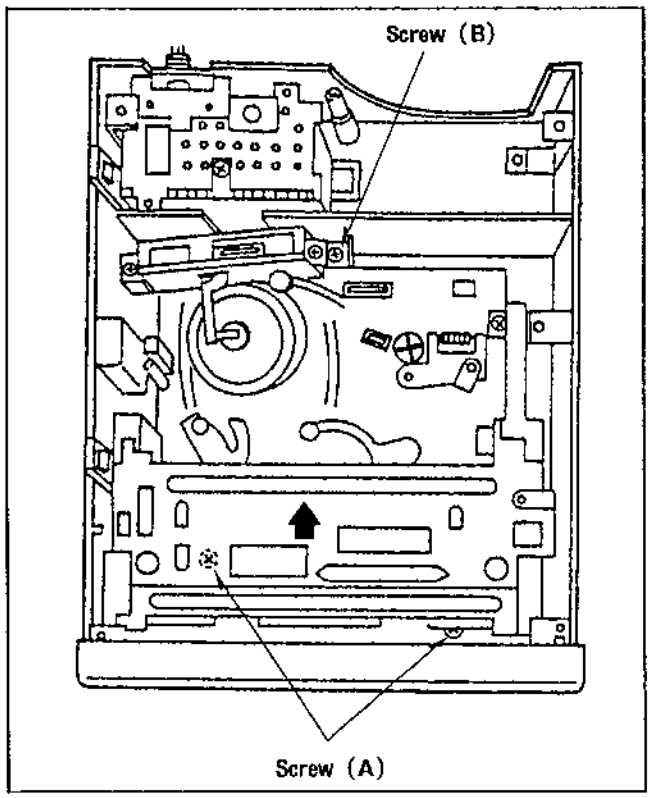


Fig.G5

1-5-3. Removal of Mechanism Connection C.B.A.

1. Unscrew 4 screws (C).
2. Lift up the Mechanism Connection C.B.A.

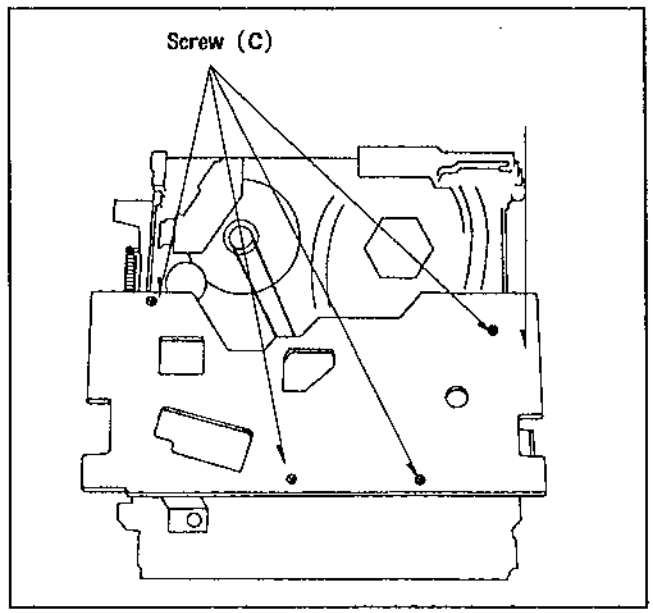
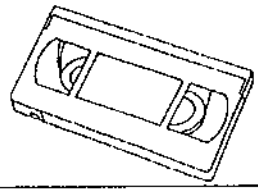
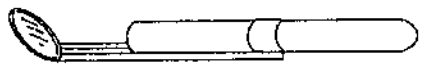
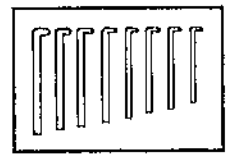
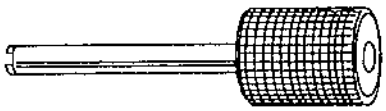
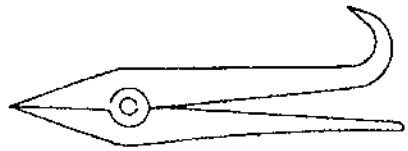
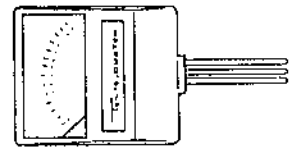
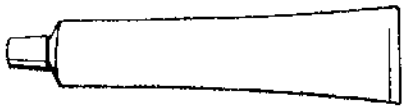
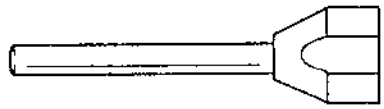
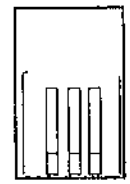
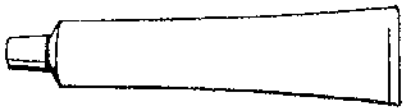
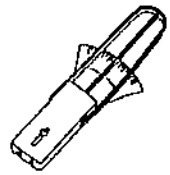


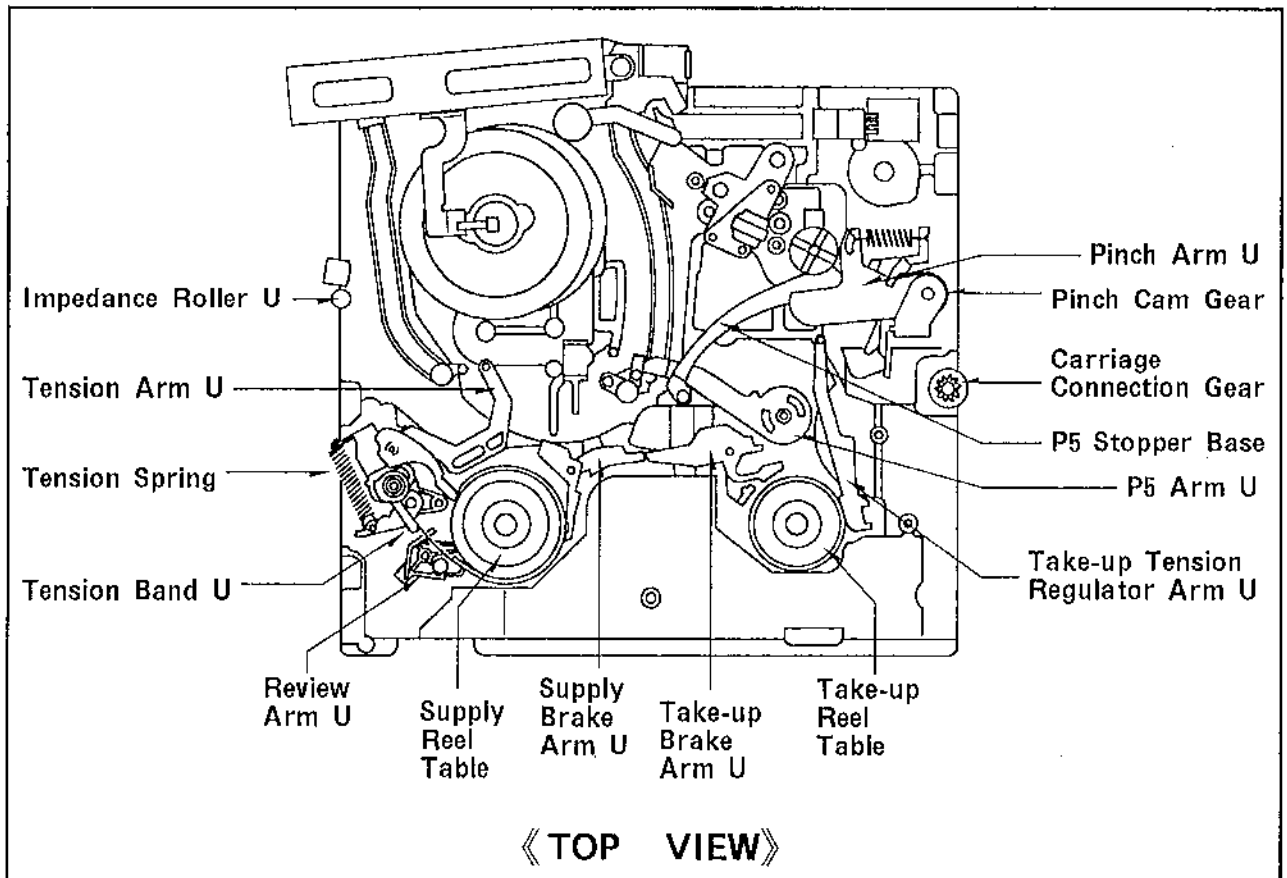
Fig.G6

1-6. SERVICE FIXTURES AND TOOLS

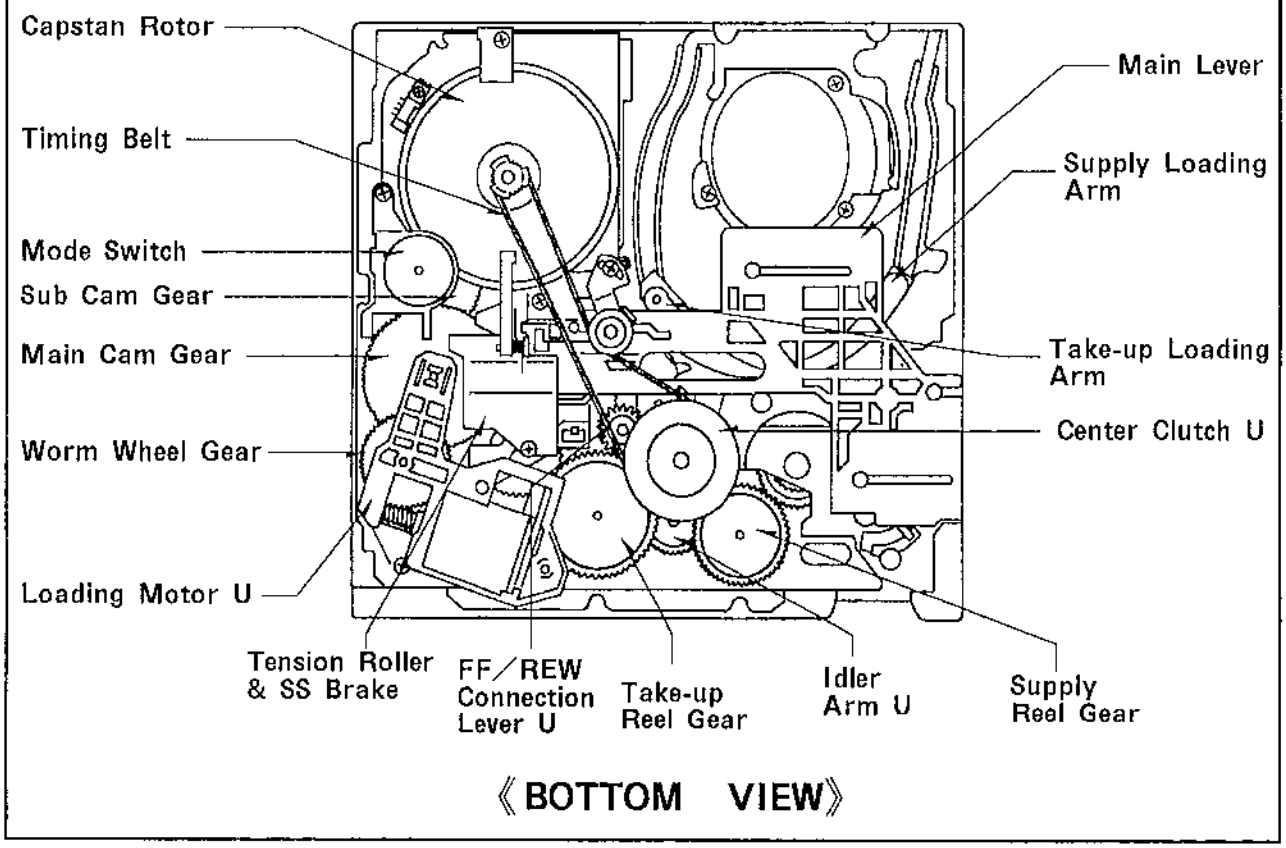
The regular maintenance is important to maintain the initial specification of the unit and prevent tape damage. The specified servicing fixture must be used to conduct adjustment.
The following fixtures, tools and measuring equipments are required to conduct complete Mechanical Adjustments.

VFM8080HQFP: VHS Alignment Tape 	VFK0948: Check Light 	VFK0326: Hex Wrench Set (0.7, 0.9, 1.2, 1.5, 1.6, 2.0, 2.4, 3.0mm) 
VFK0329: Post Adj. Screwdriver 	VFK0335: Retaining Ring Remover 	VFK0132: Back Tension Meter (Tentelometer,Made in U.S.A.) 
MOR265: Morlytone Grease (Black) (for metal parts) 	VFK0851: Center Fixing Tool 	VFK27: Head Cleaning Stick 
VFK0680: S.C.R. Grease (White) (for plastic parts) 	VFK66 ; Fan Type Tension Gauge 	VFK0330: Fine Adj. Screwdriver

1-7. Mechanical Parts Location



《TOP VIEW》



《BOTTOM VIEW》

SECTION 2
MAINTENANCE PROCEDURE

The MAINTENANCE CHART please refer to the Maintenance Section which are shown in service manual for each model.

2-1. Replacement of the Upper Cylinder Unit

1. Unscrew 2 screws (A).
2. Unsolder arrows marked portions on the top of the Upper Cylinder as shown in Fig.M1.
3. Remove the Upper Cylinder.
4. The Upper Cylinder can be reinstalled by reversing the removal procedure.
   However, when insert the Upper Cylinder be extremely carefully so that marked portion of P.C.board of the Upper Cylinder correctly matches to mark of the Lower Cylinder as shown in Fig.M2.

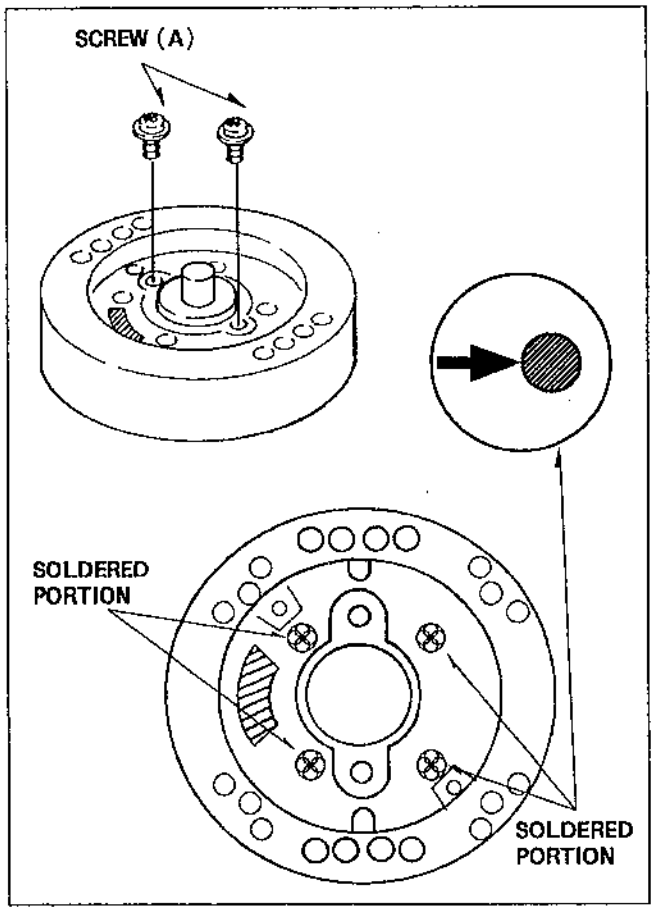


Fig.M1

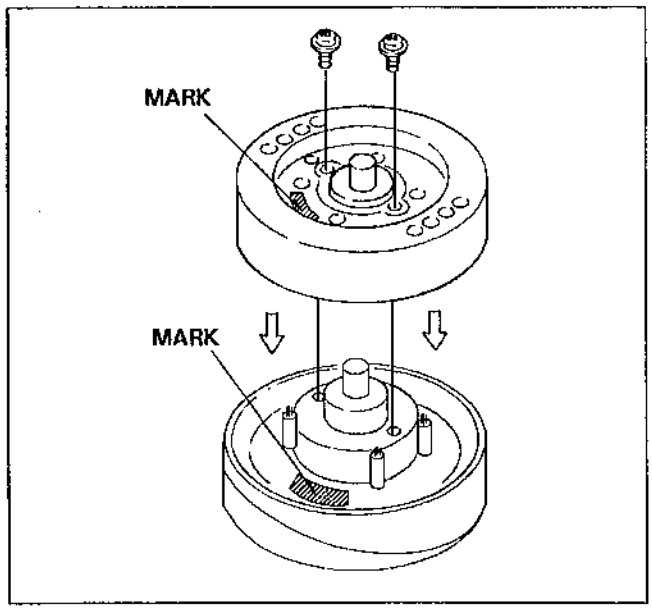


Fig.M2

<NOTE>
After reinstall the Upper Cylinder Unit should be perform Mechanical and Electrical adjustments.
3-2. FINE ADJUSTMENT of P2 and P3 POSTS
3-6. HORIZONTAL POSITION ADJUSTMENT

2-2. Replacement of Cylinder Unit

1. Remove the Earth Plate.
2. Unscrew 2 screws both side of Head Amp Unit and lift up the Head AMP.
3. Unscrew 3 screws (B) from back side of the mechanical chassis then remove the Cylinder Unit.
4. The Cylinder Unit can be reinstalled by reversing the removal procedure.

<Note>
After reinstall the Cylinder Unit should be perform Mechanical and Electrical adjustments.

3-2. FINE ADJUSTMENT of P2 and P3 POSTS
3-6. HORIZONTAL POSITION ADJUSTMENT

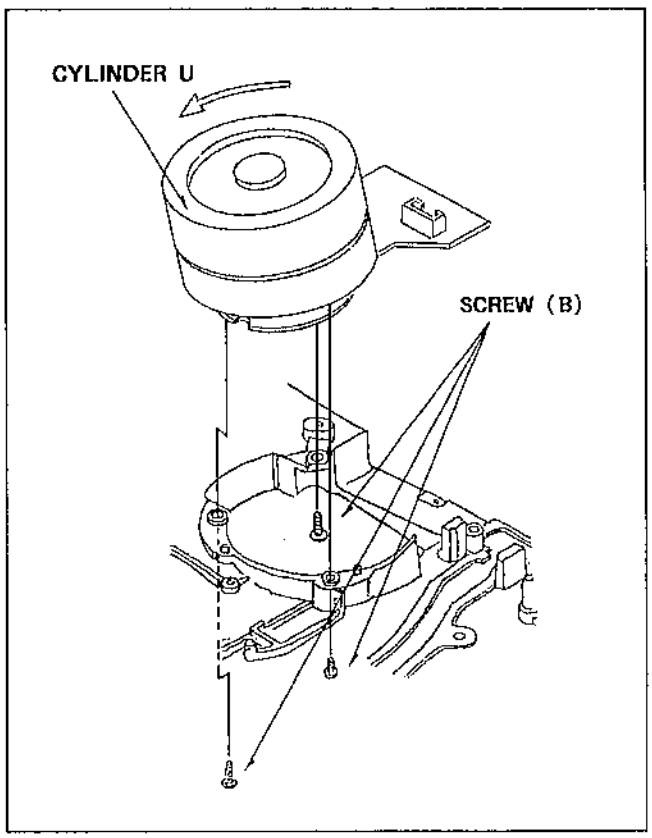


Fig.M3

2-3. Replacement of A/C HEAD Unit

1. Unscrew 3 screws (C)(D)(E) with the 3 springs then remove the A/C Head unit from the A/C Head Base.
2. The A/C Head Unit can be reinstalled by reversing the removal procedure.

<Note>
A space should be equality between the A/C Head U and the A/C Head Base when reinstall the A/C Head unit.

After reinstall the A/C Head Unit should be perform Mechanical and Electrical adjustments.

3-2. FINE ADJUSTMENT of P2 and P3 POSTS
3-3. COARSE ADJUSTMENT of A/C HEAD HEIGHT(1)
3-4. COARSE ADJUSTMENT of A/C HEAD HEIGHT(2)
3-5. FINE ADJUSTMENT of A/C HEAD HEIGHT
3-6. HORIZONTAL POSITION ADJUSTMENT

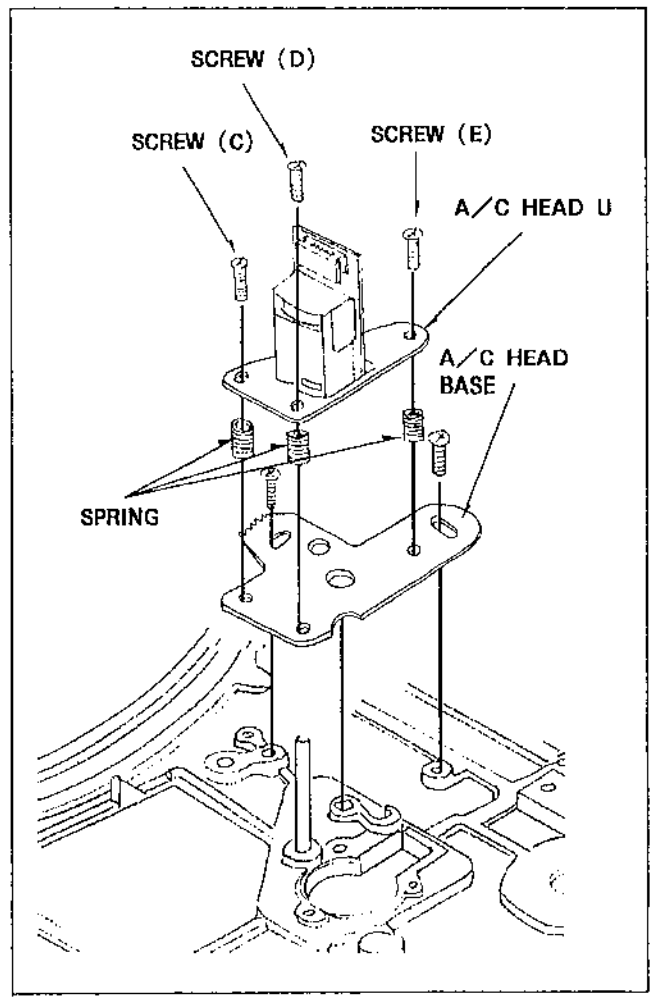


Fig.M4

2-4. Replacement of Full Erase Head Unit

1. Disconnect a connector (A).
2. Unscrew screw (F) then remove the FE Head.
3. FE Head Unit put into hole on the mechanical chassis and can be reinstalled by reversing the removal procedure.

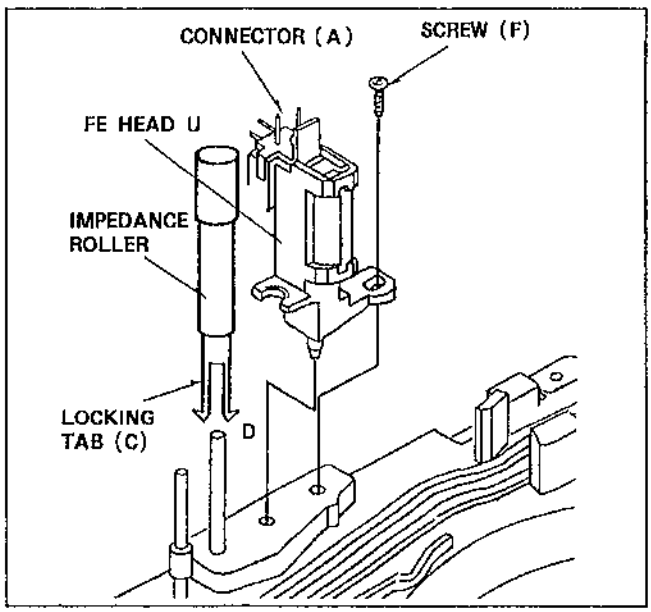


Fig.M5

2-5. Replacement of Capstan Rotor Unit and Stator Unit

1. Remove the Rotor Stopper.
2. Carefully lift up the Capstan Rotor from the Capstan Housing, taking care so as not loose the 2 Oil Seals.
3. Unscrew 3 screws (G) and remove the Capstan Stator Unit as shown in Fig.M6.
4. The Capstan Rotor and Stator can be reinstalled by reversing the removal procedure.

<Note>
After reinstall the Capstan Rotor and Stator Units should be perform Mechanical adjustment.

3-9. ADJUSTMENT of CAPSTAN HOUSING & STATOR
3-10. ADJUSTMENT of THRUST GAP
3-11. ADJUSTMENT of FG GAP

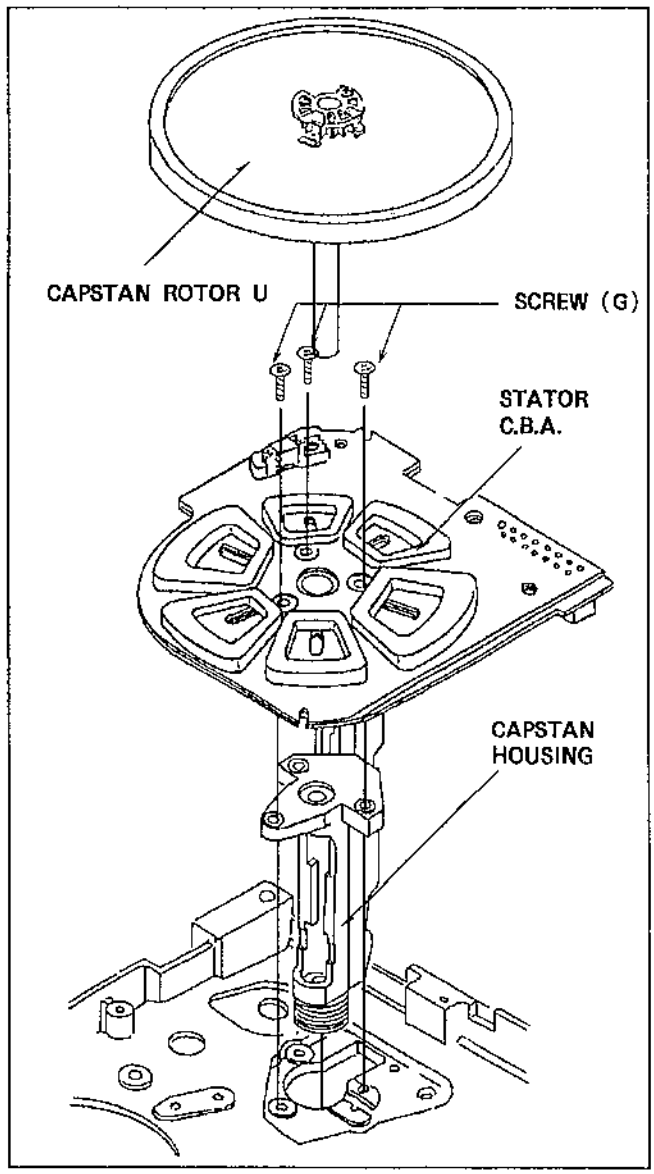


Fig.M6

2-6. Replacement of Impedance Roller Unit

1. Remove the Full Erase Head Unit with removal procedure(2-4).
2. Unlock then locking tab to direction of arrow mark as shown in Fig.M5 and remove the Impedance Roller Unit.
3. The Impedance Roller Unit can be reinstalled by reversing the removal procedure.

2-7. Replacement of Pinch Arm Unit

1. Unlock the locking tab on the Opener Piece and remove it from the shaft.
2. Remove the Pinch Arm Unit from the shaft.
3. The Pinch Arm Unit can be reinstalled by reversing the removal procedure.

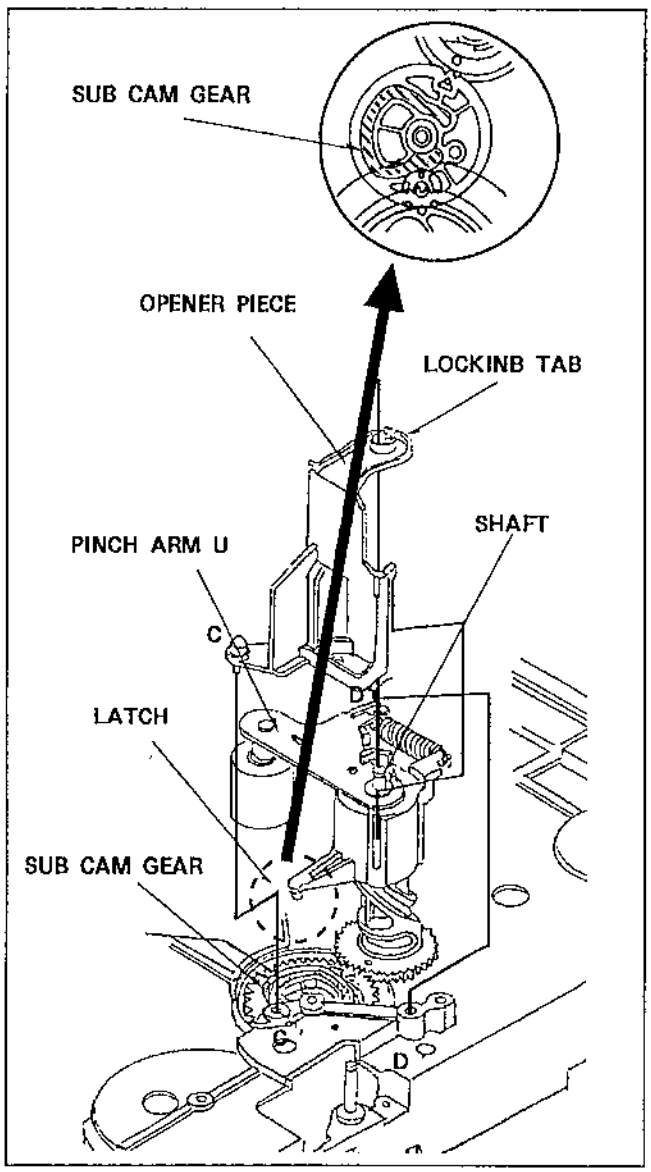


Fig.M7

2-8. Replacement of Take-up and Supply Reel Base Units

A. Supply Reel Base Unit

1. Remove the Tension Band Unit on the Supply Reel Base Unit.
2. Push the Supply main Brake Arm to direction of arrow mark and unlock the locking tab on the Supply Reel Base then pull up the Supply Reel Base Unit as shown in Fig.M8.
3. The Supply Reel Base Unit can be reinstalled by reversing the removal procedure.

B. Take-up Reel Base Unit

1. Push the Take-up Main Brake Arm to direction of arrow mark and unlock the locking tab on the top of Take-up Reel Base then pull out the Supply Reel Base Unit as shown in Fig.M8.

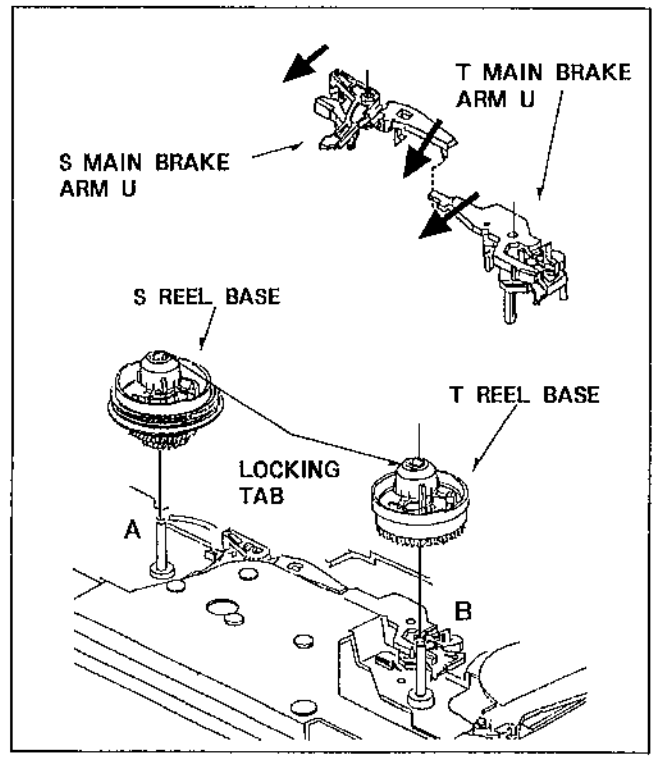


Fig.M8

2-9. Replacement of Take-up and Supply Brake Arm Unit.

1. Unlock the locking tab (A) to direction of arrow mark and lift up the Supply Brake Arm Unit.
2. Unlock the locking tab (B) and lift up the Take-up Brake Arm Unit.
3. Both Brake Arm Units can be reinstalled by reversing the removal procedure.
   However the boss (C) of the Supply Brake Arm Unit insert to hole (E) of mechanical chassis while pushing the Main Lever to direction of arrow mark as shown in Fig.M9. (expanded view)

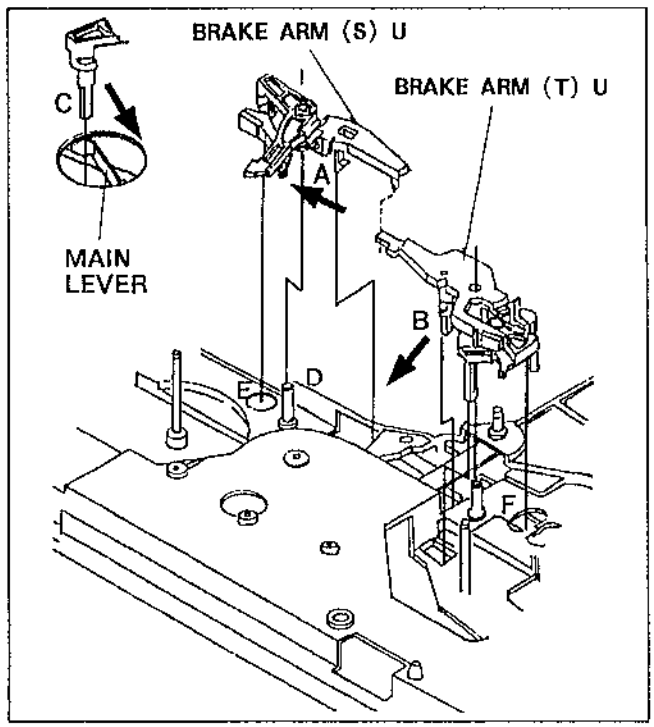


Fig.M9

2-10. Replacement of Tension Band Unit

1. Remove the cut washer (H) and lift up the Tension Arm Unit with the Tension Band and spring from the Tension Spring Arm.
2. Unlock the locking tab (A) to direction of arrow mark and remove the Tension Band from the Arm Unit.
3. Unlock the locking tab (B) and remove the Tension Band from the Tension Arm Unit.
4. The Tension Band Unit can be reinstalled by reversing the removal procedure.

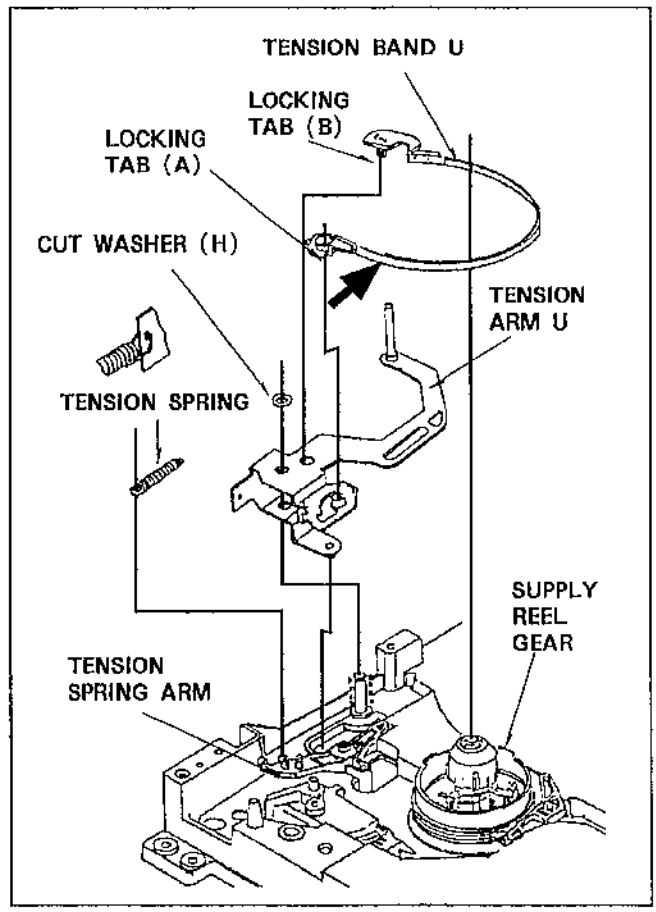


Fig.M10

2-11. Replacement of Loading Motor Unit

1. Unscrew screw (I).
2. Unlock the locking tab (A) from the top of the mechanical chassis.
3. Lift up the Loading Motor Bracket and push it to direction of arrow mark as shown in Fig.M11.
4. When reinstall the Loading Motor Unit, insert the locking hole (B') of Loading Motor Bracket Unit to shaft (B) on the mechanical chassis. Also a hole (C) of the loading Motor Unit must be matched to the shaft (C') as shown in Fig.M11.

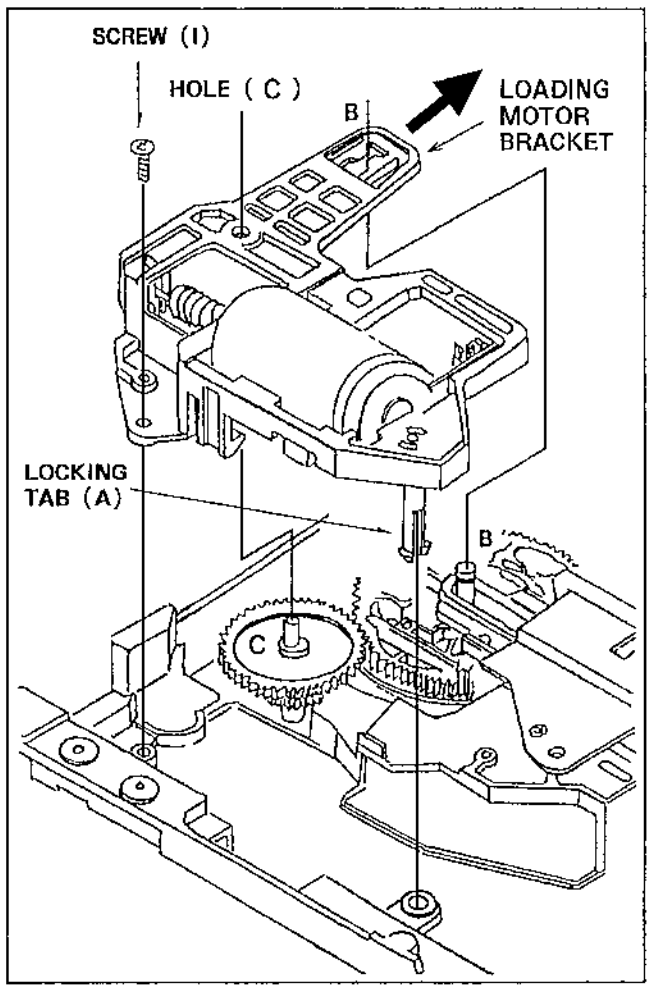


Fig.M11

2-12. Replacement of Cleaner Roller Unit

1. Unlock the locking tab (A) as shown in Fig.M12. and lift it up.
2. The Cleaner Roller Unit can be reinstalled by reversing the removal procedure.

3. Replacement of the Cleaner Rubber Unit.
   Hold the Cleaner Roller Unit and unlock the locking tab (B) then lift it up.

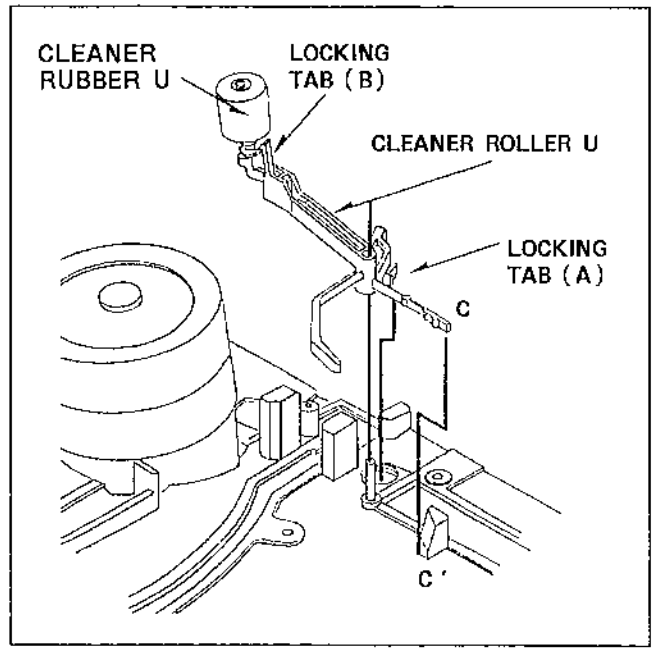


Fig.M12

2-13. Replacement of SS Brake Base Unit and Timing Belt

1. Remove the Timing Belt.
2. Unscrew (J) and (K) then remove SS Brake Base Unit.
3. SS Brake Unit and Timing Belt can be reinstalled by reversing the removal procedure.

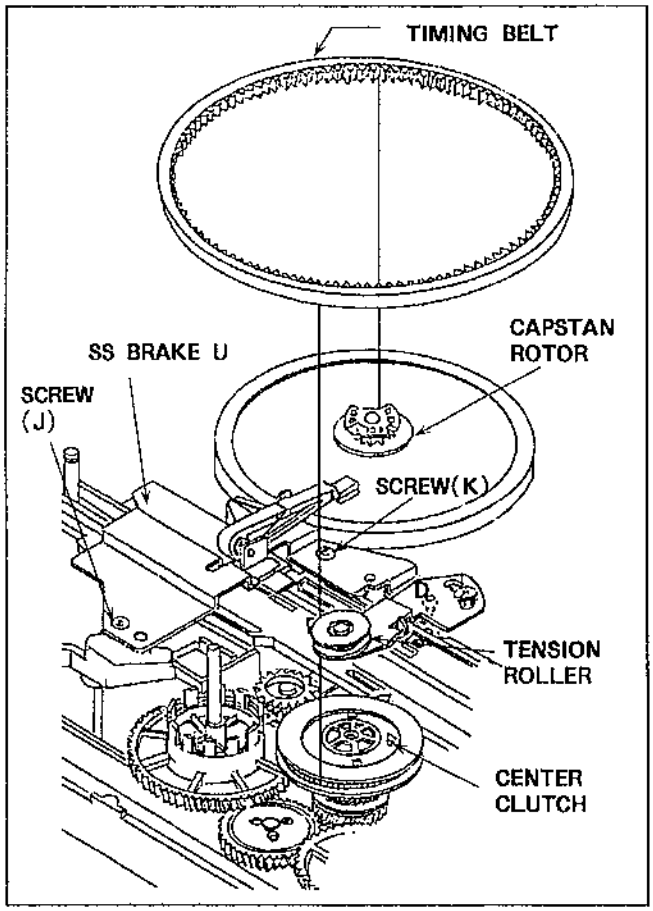


Fig.M13

2-14. Replacement of Supply & Take-up Inclined Base Unit

1. Remove SS Brake Unit, Main Lever Unit and Supply and Take-up Loading Arm Unit refer to SECTION 2. and 3. in this service manual.
2. Remove the Inclined Holder base (A) from back side of mechanism chassis.
3. Remove the Supply and Take-up Inclined Base Units.
4. The both Inclined Base Units can be reinstalled by reversing the removal procedure.

<NOTE>
After reinstall the Inclined Base Unit should be perform Mechanical adjustment.

3-2. FINE ADJUSTMENT of P2 and P3 POSTS
3-5. FINE ADJUSTMENT of A/C HEAD HEIGHT
3-6. HORIZONTAL POSITION ADJUSTMENT of A/C HEAD

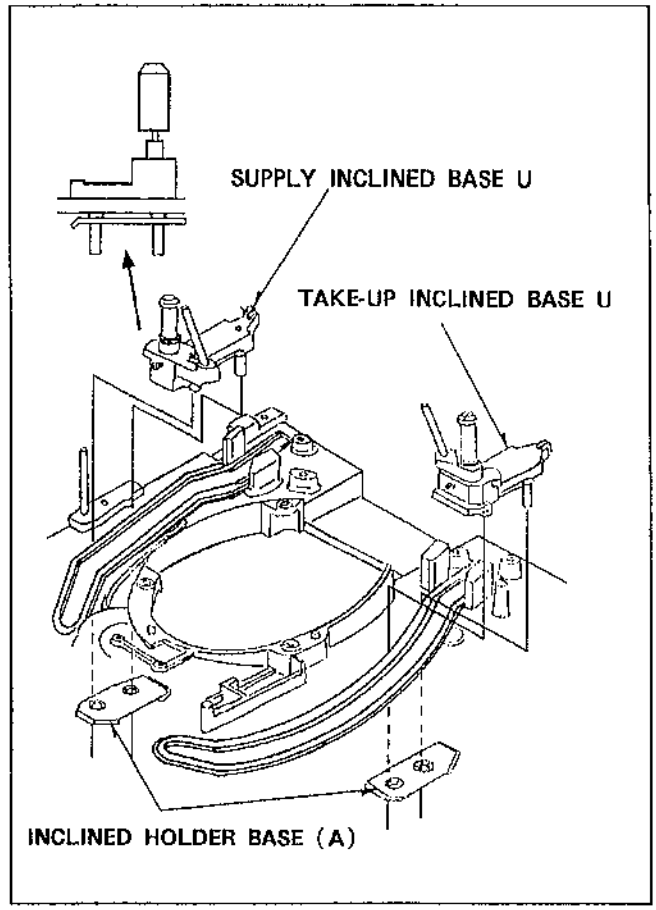


Fig.M14

SECTION 3
MECHANICAL ADJUSTMENT PROCEDURE

3-1. Coarse Adjustment of Tape Guide Post Height

1. Remove the Top Plate and Cassette Holder.
2. Turn the Loading Motor until the unloading completes.
3. Loosen the fixing screw of P2 and P3 Posts.
4. Rotate the P2 and P3 Posts clockwise to the end.
5. Rotate the P2 and P3 Posts twice counter-clockwise as shown in Fig.M15.
6. Install the Cassette Holder and Top Plate.
7. Playback the normal tape and make sure that the edge of not curing at the bottom or top end of the P1,P2,P3 and P4 Posts as shown in Fig.M17.

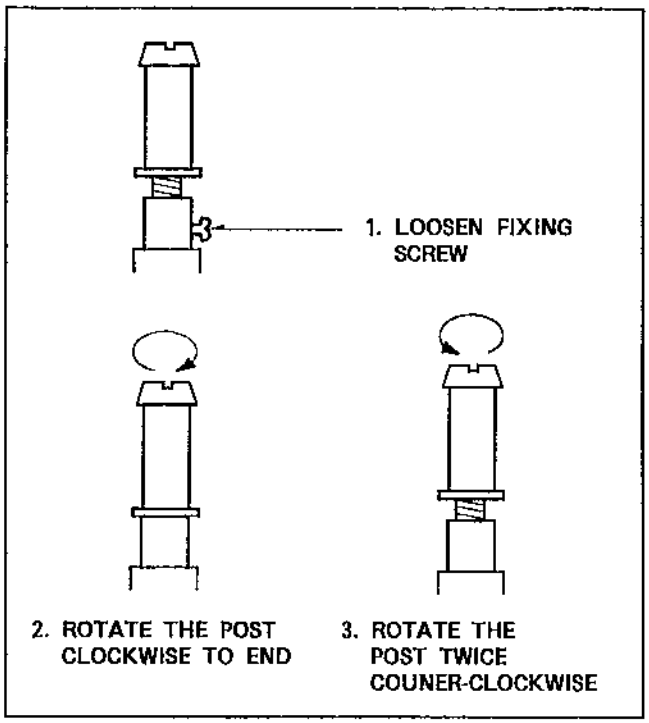


Fig.M15

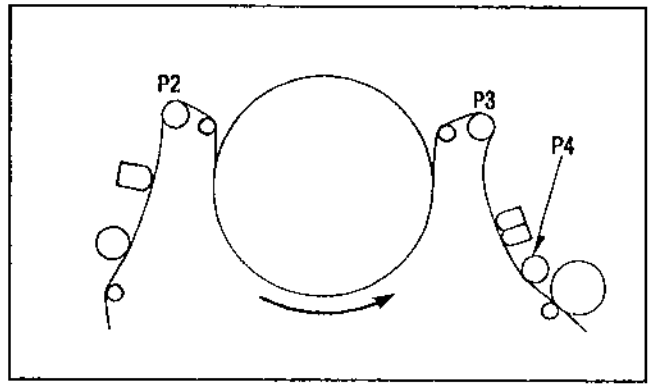


Fig.M16

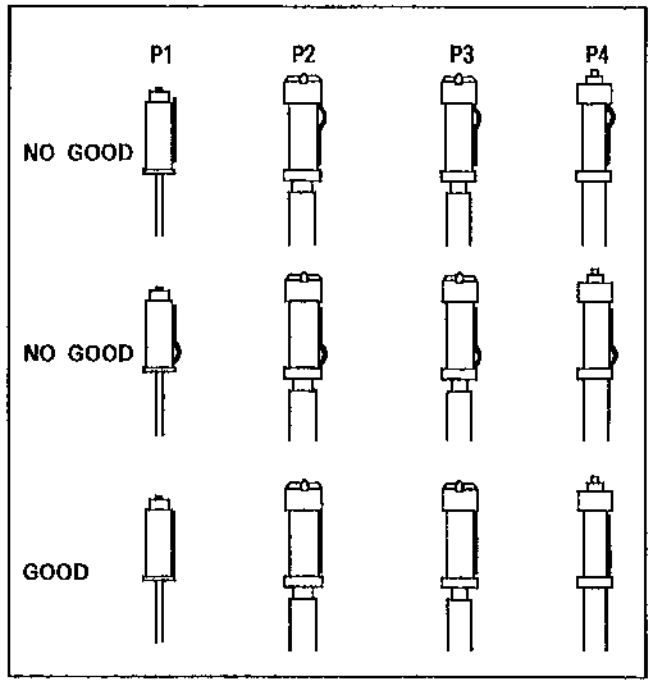


Fig.M17

3-2. Fine Adjustment of P2 and P3 Posts

1. Connect the oscilloscope to the Test Point of the HEAD AMP (Video RF Envelope) and the head switching pulse as a triggering signal.

<NOTE>
TEST POINT please refer to the MECHANICAL ADJUSTMENT INFORMATION which are shown in service manual for each model.

2. Playback the 2nd portion of the alignment tape.
3. Press the tracking control button on the Front panel and adjust for maximum Video RF envelope.
4. If the RF envelope appears like example "A" or "B" in Fig.M18 then adjustment of the tape guide post (P3:Exit) is necessary.
5. Adjust the P3 post with the post adjustment screwdriver so that the RF envelope waveform at the exit portion becomes flat as shown in Fig.M18.
6. If the RF envelope appears like example "C" or "D" in Fig.M18 then adjustment of the tape guide post (P2:Entrance) is necessary.
7. Adjust the P2 post with the post adjustment screwdriver so that the RF envelope waveform at the entrance portion becomes flat as shown in Fig.M18.

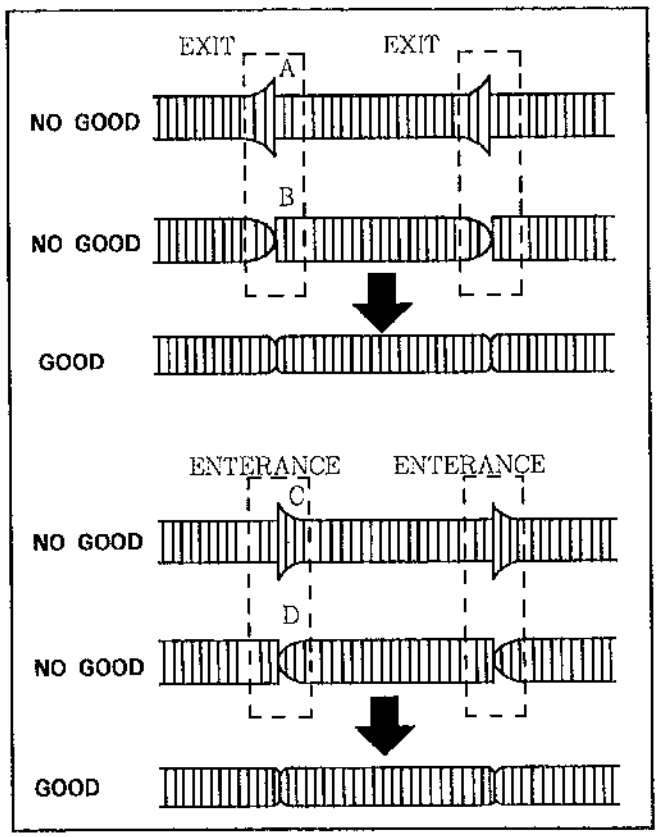


Fig.M18

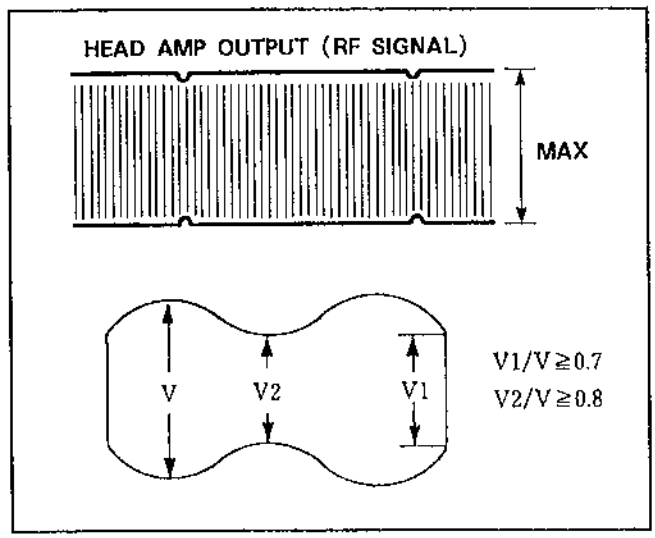


Fig.M19

3-3. Coarse Adjustment of A/C Head Height (1)

<NOTE>
This procedure should be performed only when the A/C Head is replaced.

1. Playback the normal tape.
2. Turn the 3 screws (A)(B)(C) mutually so that lower edge of tape running at lower edge of A/C Head and confirm a space as much as possible to flat between the A/C Head Unit and the A/C Head Base.

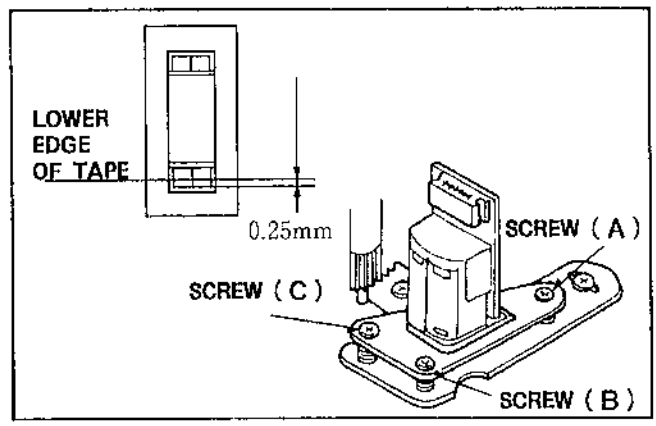


Fig.M20

3-4. Coarse Adjustment of A/C Head Height (2)

1. Playback the normal tape.
2. Rotate the screw (A) as shown in Fig.M20 until the wrinkle appears on the lower edge of tape at P4 Post.
3. Rotate the screw (B) until the wrinkle just disappear on the lower edge of tape at P4 Post.

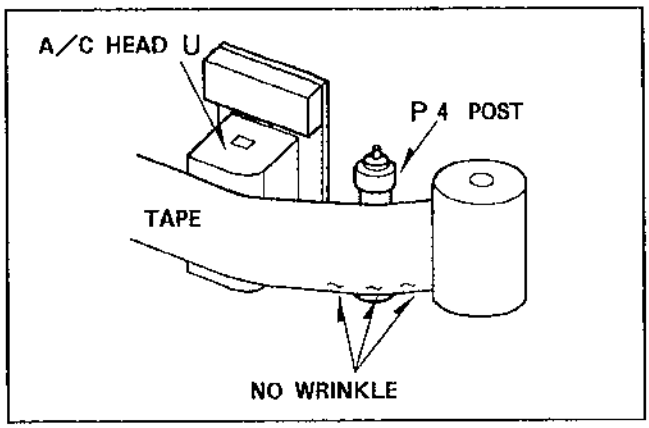


Fig.M21

3-5. Fine Adjustment of A/C Head Height

1. Connect the oscilloscope to the Audio output.
2. Playback the 2nd portion of the alignment tape.
3. Rotate the screw (C) so that audio signal becomes maximum.

<When moving the A/C Head up>

1. Rotate the screw (A) counter-clockwise until the wrinkle appears on the lower edge of tape at P4 Post.
2. Rotate the screw (B) counter-clockwise until just disappears on the lower edge of tape at P4 Post.
3. Rotate the screw (C) counter-clockwise until the audio signal is maximized.

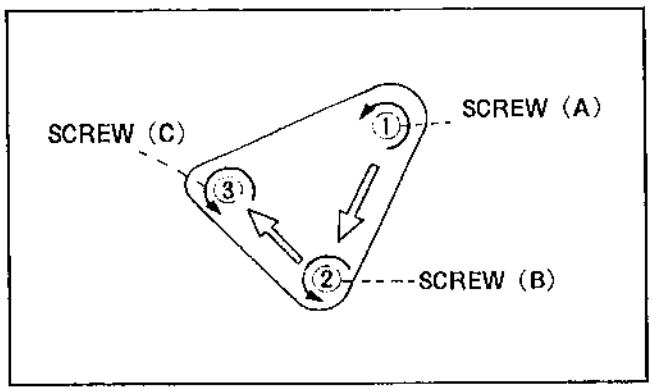


Fig.M22

<When moving the A/C Head down>

1. Rotate the screw (B) clockwise until the wrinkle appears on the lower edge of tape at P4 Post.
2. Rotate the screw (A) clockwise until the wrinkle just disappear on the lower edge of tape at P4 Post.
3. Rotate the screw (C) clockwise until the audio signal is maximized.

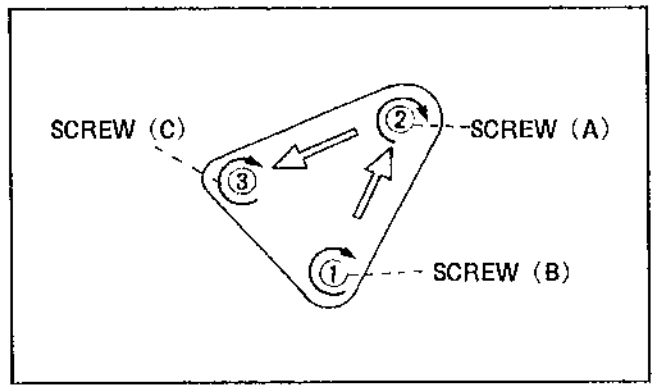


Fig.M23

3-6. Horizontal Position Adjustment of A/C Head.

<NOTE>
TEST POINT and JUMPER WIRE position, please refer to the MECHANICAL ADJUSTMENT INFORMATION which are shown in service manual for each model.

1. Set the tracking control into the center fix position by connect a jumper wire on the MAIN C.B.A.
2. Connect the oscilloscope to the Audio output, Video RF envelope on the Head Amp test point and head switching pulse on the Head Amp test point as for triggering.
3. Playback the 4th portion of the alignment tape.
4. Loosen the 2 screws (D)(E).
5. Adjust the A/C Head Base (F) so that the phase of audio drop-out and RF video drop-out becomes the same as possible. Fig.M24.
6. Playback the 2nd portion of the alignment tape.
7. Adjust the A/C Head Base (F) until the video RF signal is maximized.
8. Carefully tighten screw (D) with hold the A/C Head Base position with the Fine Adjustment Gear Driver then tighten screw (E).

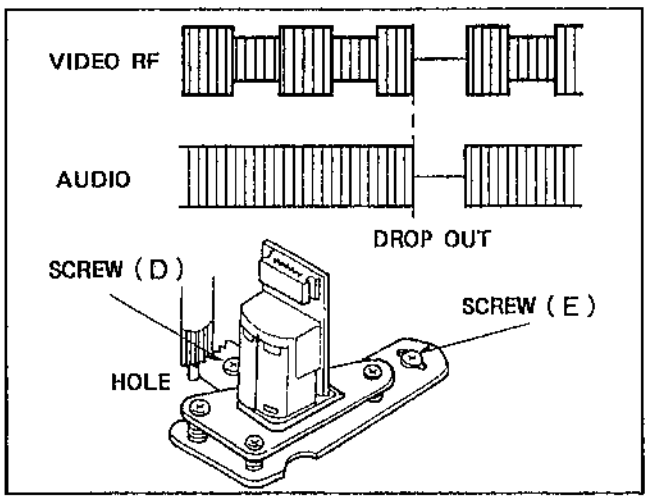


Fig.M24

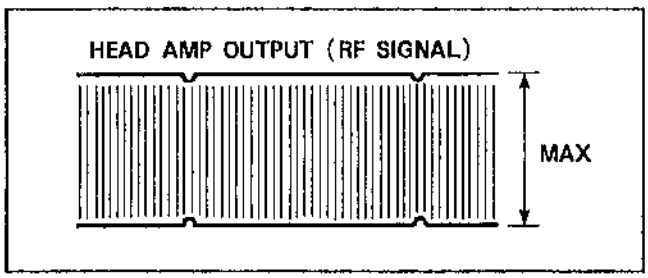


Fig.M25

3-7. Adjustment of Tension Post Position

1. Remove the Top Plate and Cassette Holder.
2. Turn the Loading Motor until the loading completes.
3. Adjust the hole of the Tension Band Unit by Hex wrench so that the left edge of the Impedance Roller and Tension Arm Unit as shown in Fig.M26.

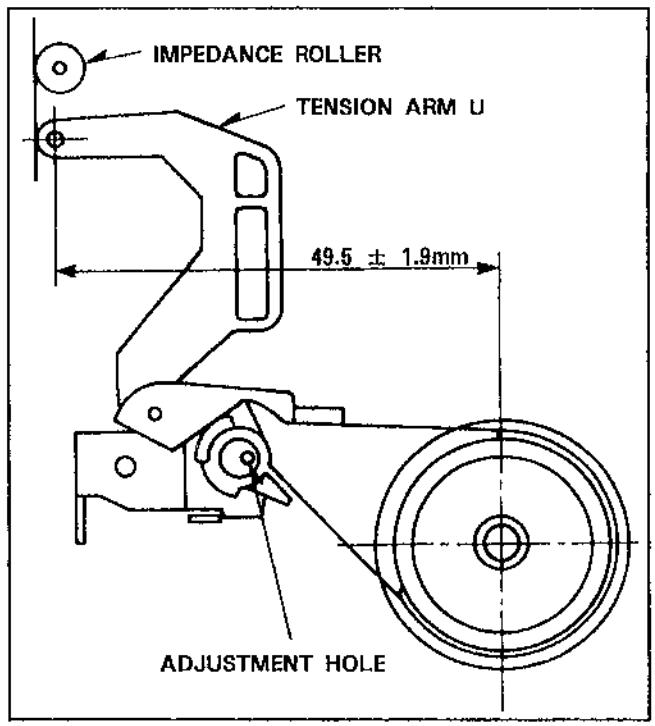


Fig.M26

3-8. Adjustment of Back Tension

1. Playback the cassette tape from the begging of tape and wait until tape movement has stabilized.
2. Insert the back tension meter into the path of the tape and confirm the back tension to be within specification as shown in Fig.M27.
3. If back tension is not in the specification, change the spring notch as shown in Fig.M28.

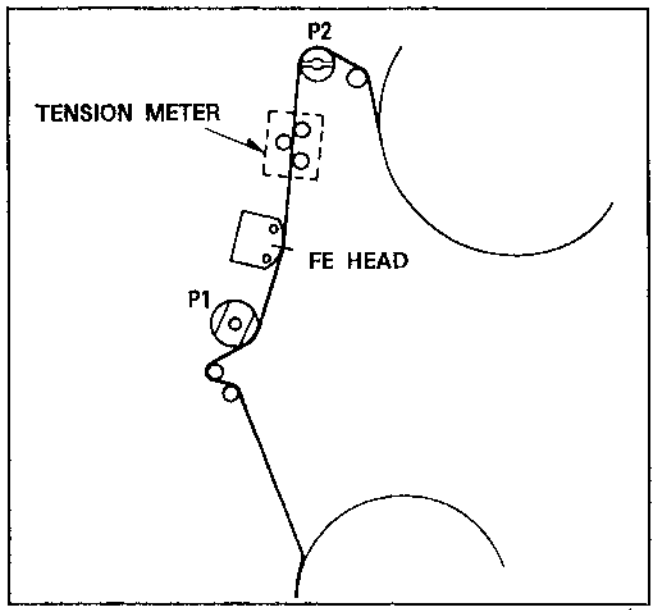


Fig.M27

<NOTE>
Specification of Back Tension, please refer to the MECHANICAL ADJUSTMENT INFORMATION which are shown in service manual for each model.

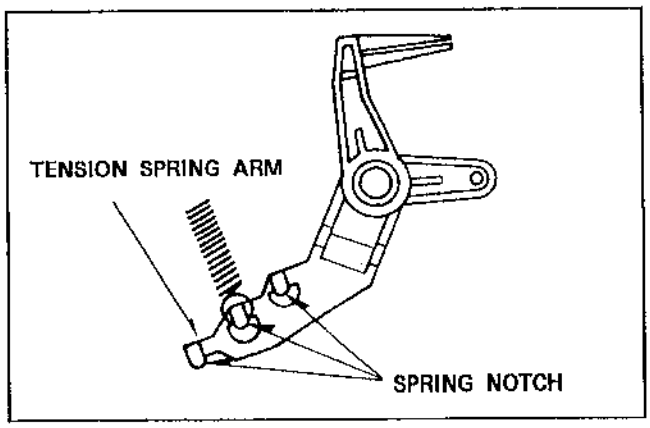


Fig.M28

3-9. Adjustment of Capstan Housing & Stator.

1. Install the Capstan Housing into the mechanical chassis and place the Capstan Stator into position.
2. Loosely tighten 3 screws (G).
3. Insert the Center Fixing Tool (VFK0851) as shown in Fig.M29.
4. Tighten 3 screws (G).
5. Remove the Center Fixing Tool.

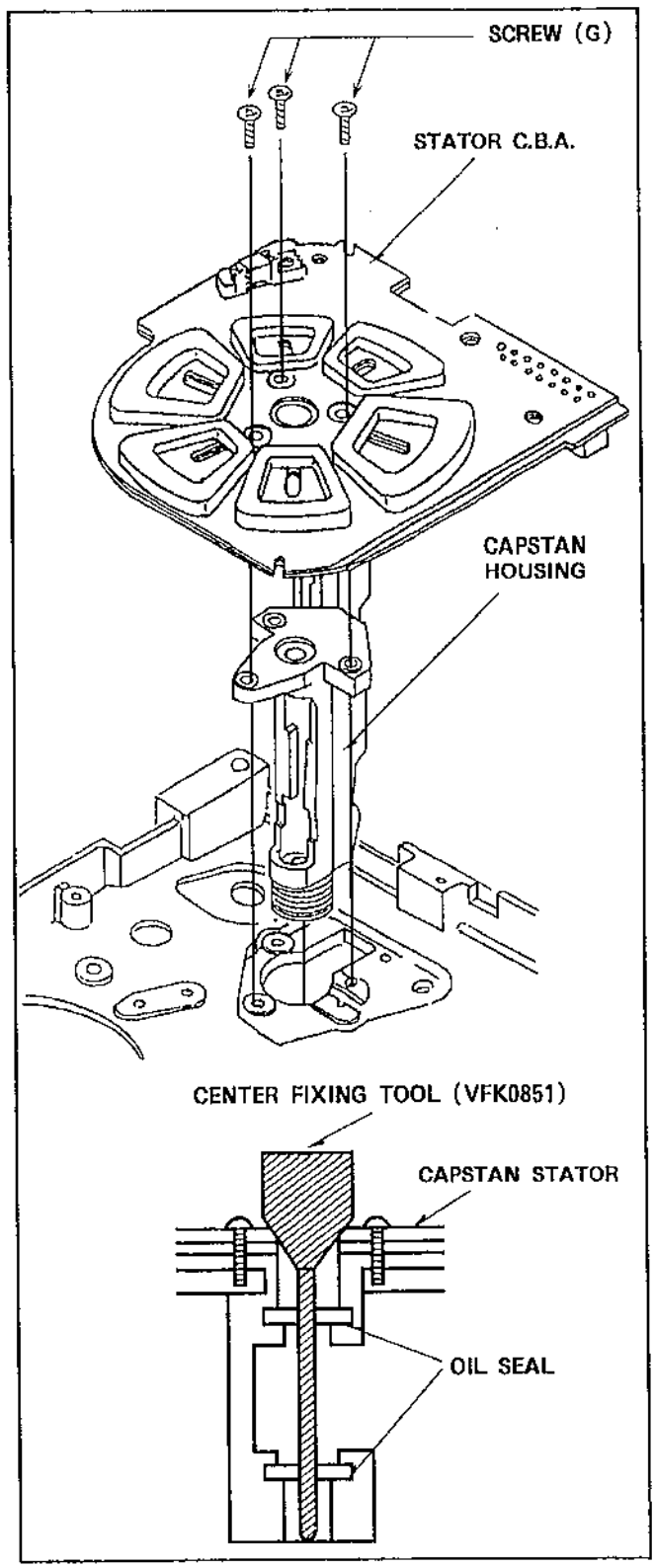


Fig.M29

3-10. Adjustment of Thrust Gap

1. Turn the Thrust Adjustment Screw clockwise to until the Capstan Rotor just separate from the Capstan Stator while rotating the Capstan Rotor by hand.
2. Turn the Thrust Adjustment Screw clockwise to 180 degrees from point at step 1.
3. Set the 2 Oil Seal to edge of the Capstan Housing as show in Fig.M30.

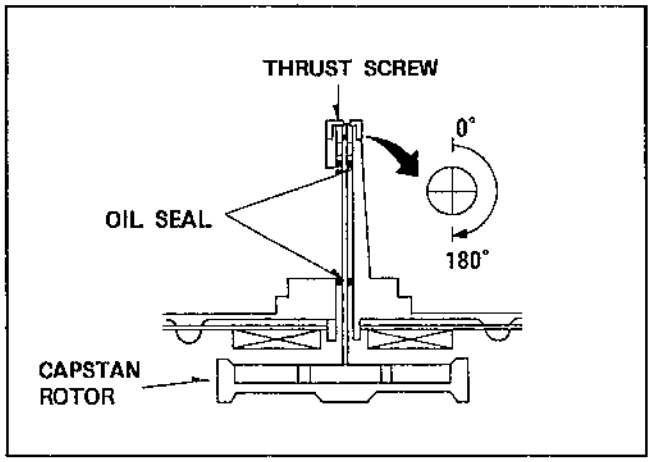


Fig.M30

3-11. Adjustment of FG GAP

1. Loosen screw (H) and set the Fine Adjustment Screw Driver in the hole on the Capstan Stator Unit.
2. Adjust the gap between FG Head and the Capstan Rotor.
3. After adjustment, tighten a screw (H).

<NOTE>
Specification of FG GAP, please refer to the MECHANICAL ADJUSTMENT INFORMATION which are shown in service manual for each model.

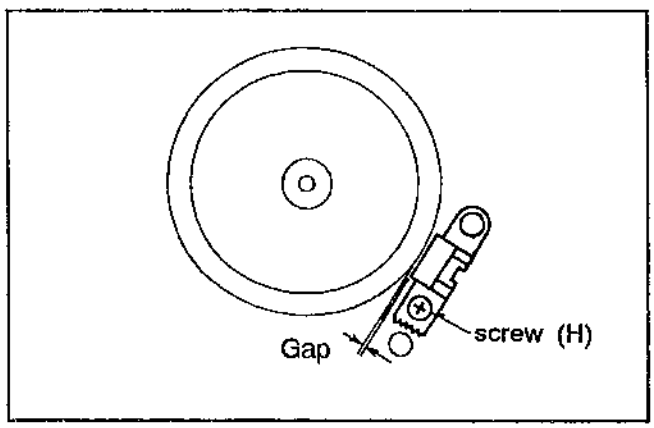


Fig.M31

3-12. Pressing Force Confirmation of the Pressure Roller

1. Playback the end portion of the 120 minutes tape.
2. Set the Fan type tension gauge to point (A) and push to direction indicated by the arrow (B) as shown in Fig.M32.
3. Confirm that reading of tension gauge is in specification at momentary stop the tape running.

<Note>
Specification of PRESSING FORCE, please refer to the MECHANICAL ADJUSTMENT INFORMATION which are shown in service manual for each model.

If the pressing force is not in specification, change the pressure spring.

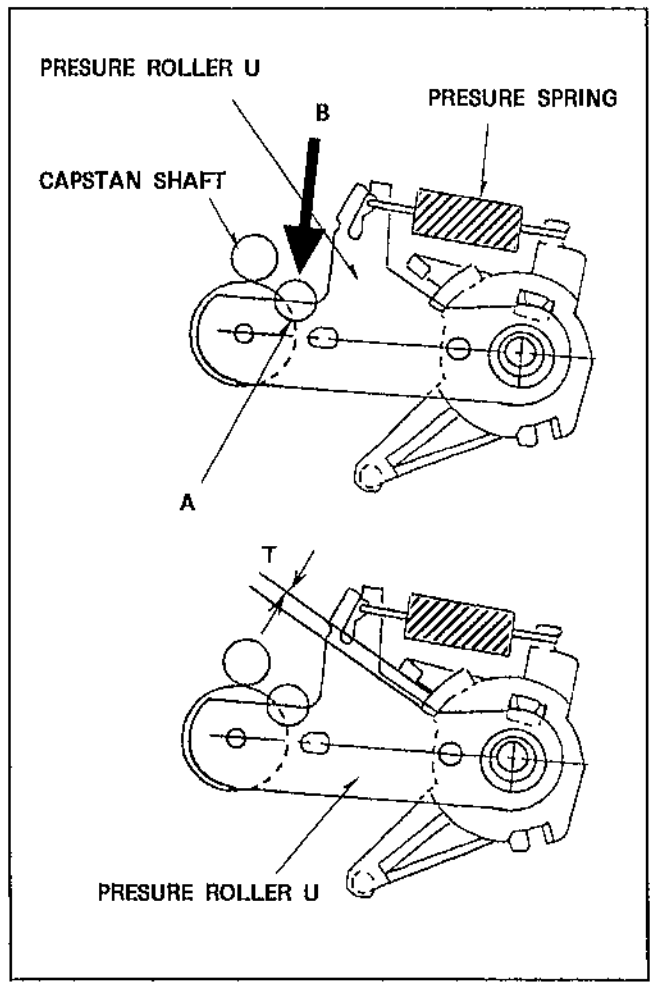


Fig.M32

SECTION 4
ASSEMBLY & PHASE ADJUSTMENT PROCEDURE

4-1. Assembly Procedures of Mechanism

The gear phase alignment is performed in the cassette down position and is crucial for the K-Mechanism to operate correctly.

1. Top view of gear phase alignment marks.
   There are alignment marks on the pinch cam gear and sub cam gear. there is one alignment mark on the carriage gear.

2. Bottom view of gear phase alignment marks.
   There are alignment marks on take-up loading gear and supply loading gear. There is an additional mark on the take-up loading gear that aligns with the mark on the main lever. There are alignment marks on the main cam gear and the sub cam gear. The mode switch gear mark aligns with a notch in the mode switch frame.

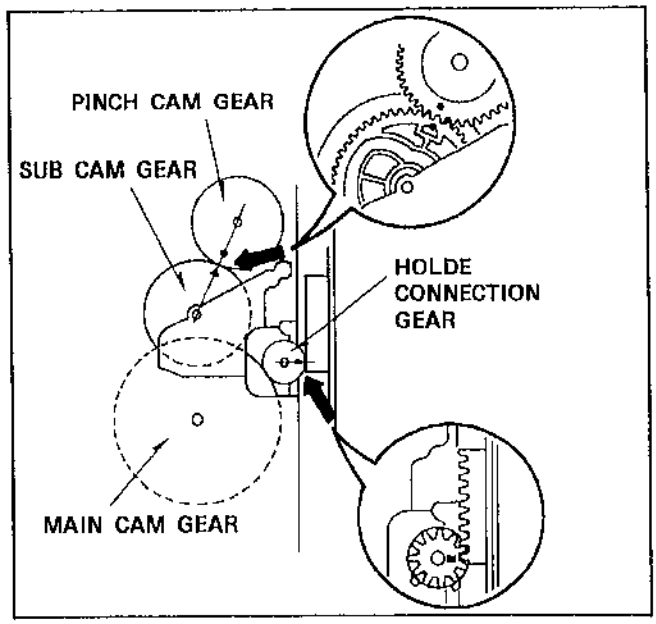


Fig.M33

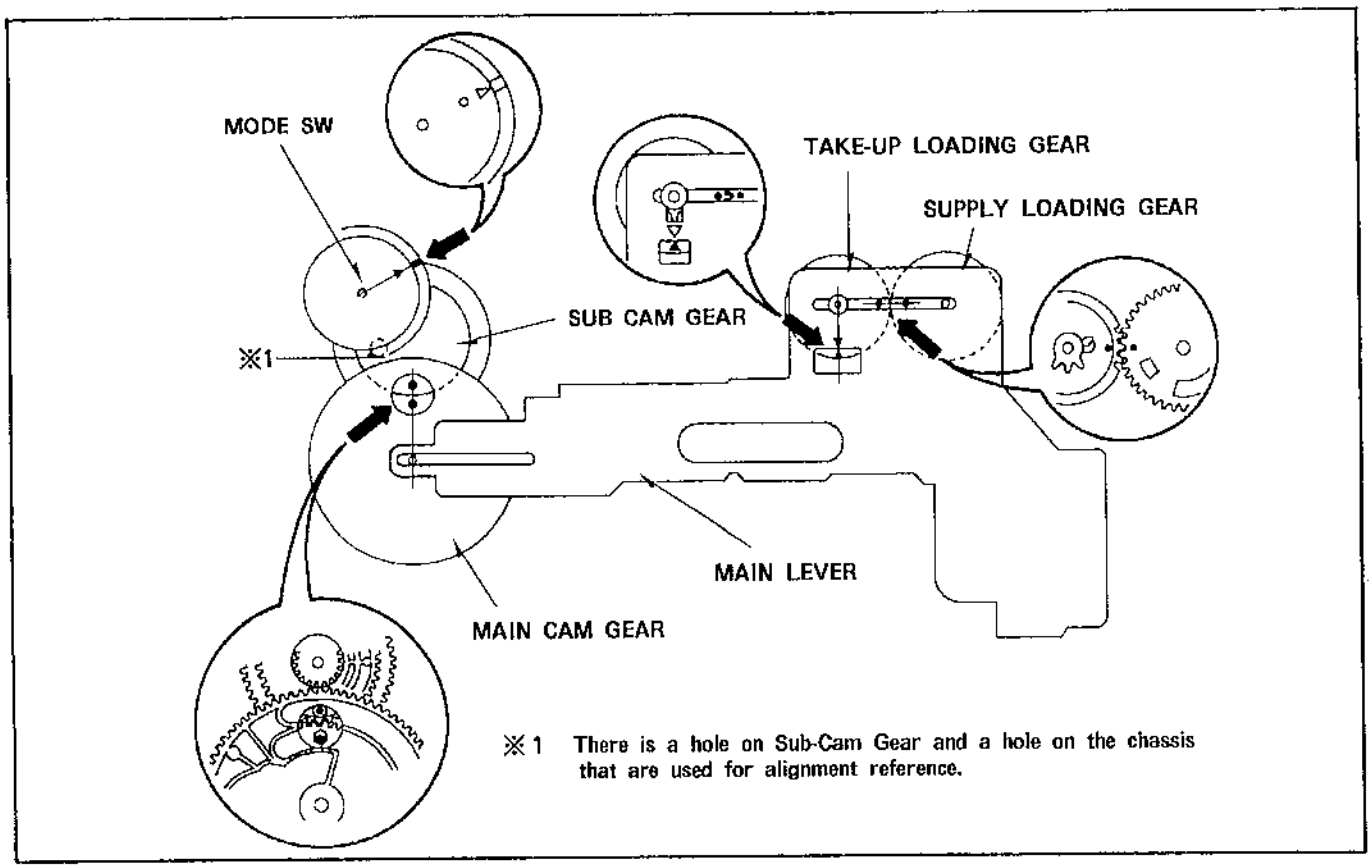

MODE SW
TAKE-UP LOADING GEAR
SUPPLY LOADING GEAR
SUB CAM GEAR
※1
MAIN LEVER
MAIN CAM GEAR
※1 There is a hole on Sub-Cam Gear and a hole on the chassis that are used for alignment reference.

Fig.M34

4-2. Assembly of parts on the Top Chassis

1. Install the Pinch Cam Gear onto shaft (A) and the P5 Arm Unit onto shaft (B).
2. Install the P5 Stopper Base with the cut washer (D) and screw (C).
3. Install the P5 Stopper on the P5 Stopper Base with latch (E).

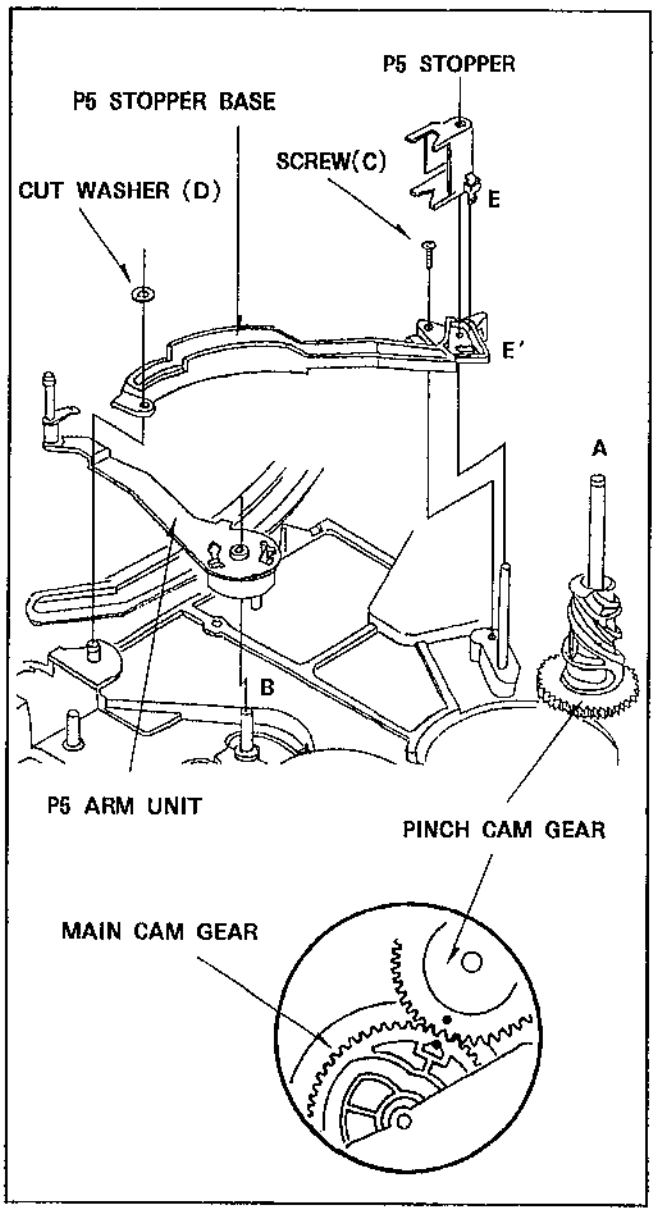


Fig.M35

4-3. Assembly of parts on the Bottom Chassis

1. Install the Idler Arm Unit onto shaft (F).
2. Install the Take-up and Supply Reel Gears onto shaft (G) and (H).
3. Install the Idler Regulator Level onto shaft (I) then install the Direct Lever.
4. Install the Center Clutch onto shaft (F) with the cut washer.

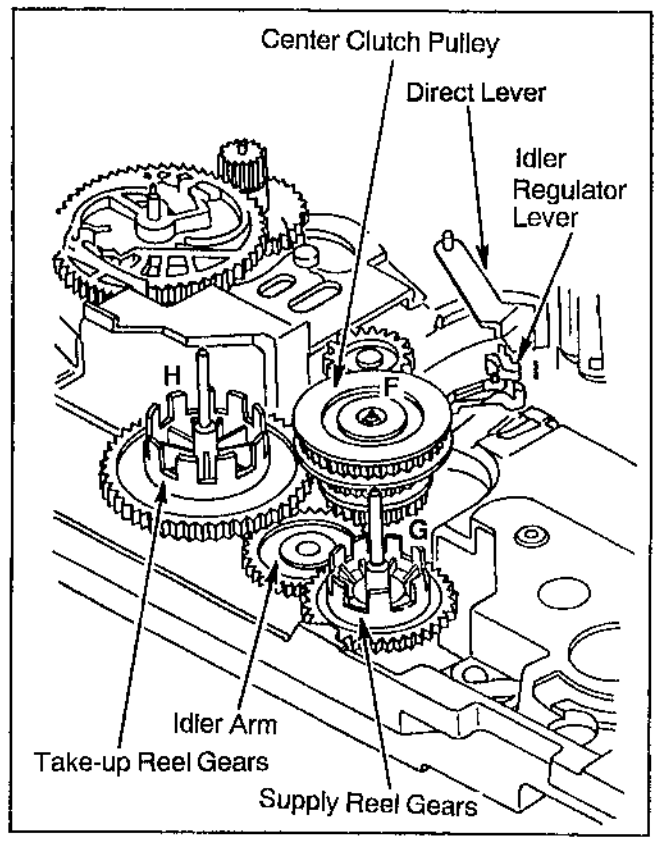


Fig.M36

4-4. Assembly of Main Cam Gear and Sub Cam Gear

1. Install the Sub Cam Gear on to shaft (J) so that the chassis hole aligns with hole in the Sub Cam Gear.
2. Rotate the Holder Connection Gear to position of arrow mark as shown in Fig.M37.
3. Install the Main Cam Gear onto shaft (K) so that the hole of the Main Cam Gear aligns with the hole in the Sub Cam Gear. Also insert the boss of the Take-up Tension Regulator Arm into the slot on the Main Cam Gear.

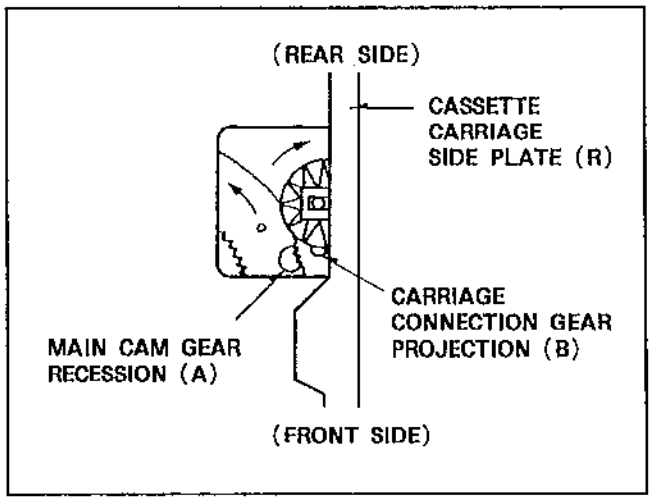


Fig.M37

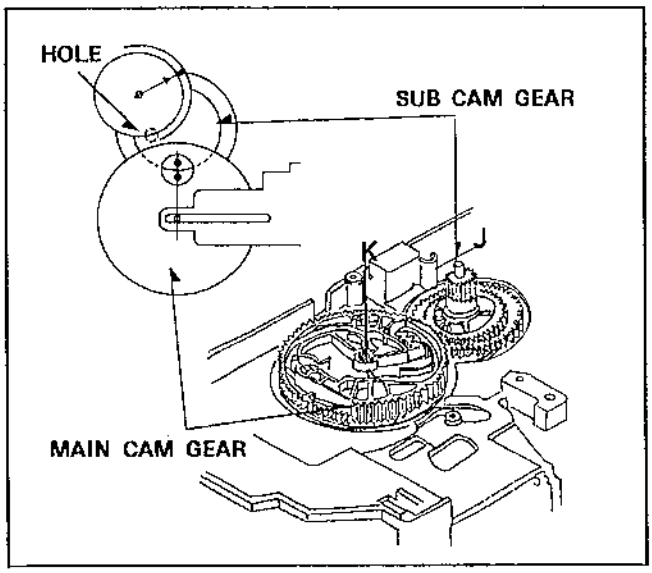


Fig.M38

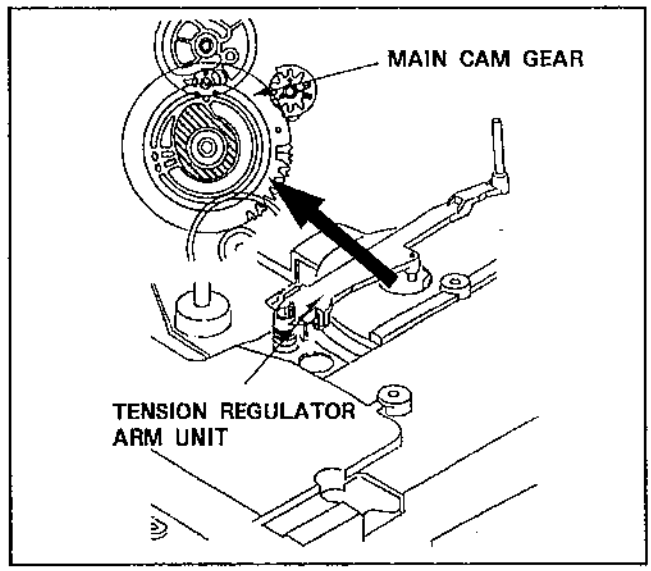


Fig.M39

4-5. Assembly of Mode Switch

1. Align a triangle mark on the Mode Switch Gear with the notch on the Mode Switch frame.
2. Confirm the Main and Sub Cam Gears aligned properly then install the Mode Switch with screw (L).

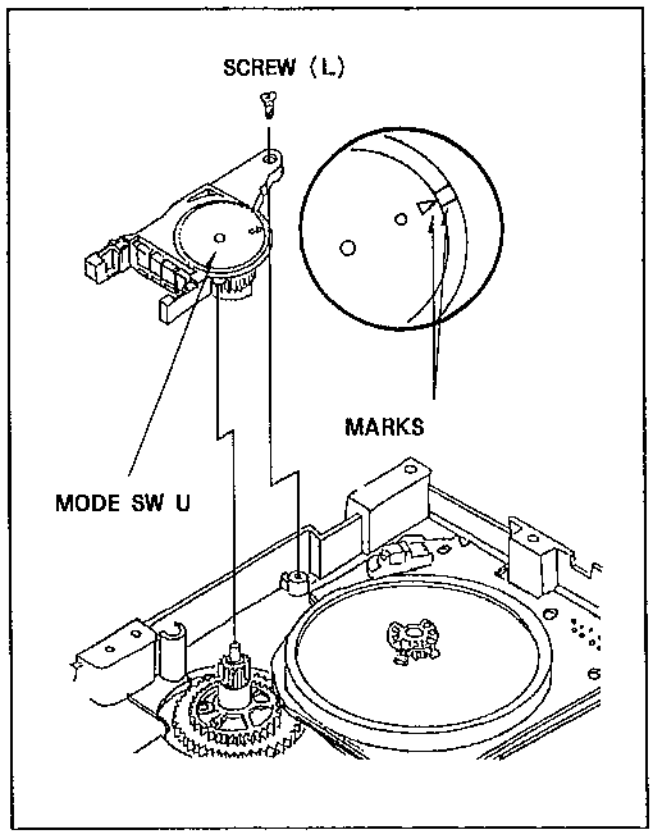


Fig.M40

4-6. Assembly of Take-up and Supply Loading Gears.

1. Install the Supply Loading Gear onto the shaft (S).
2. Install the Take-up Loading Gear onto the shaft (T) so that hole on the Take-up Loading Gear align with the hole on the Supply Loading Gear.
3. Install the Supply Loading Arm onto shaft of the Supply Inclined Base with washer.
4. Insert the Take-up Loading Arm onto shaft of the Take-up Inclined Base with washer.

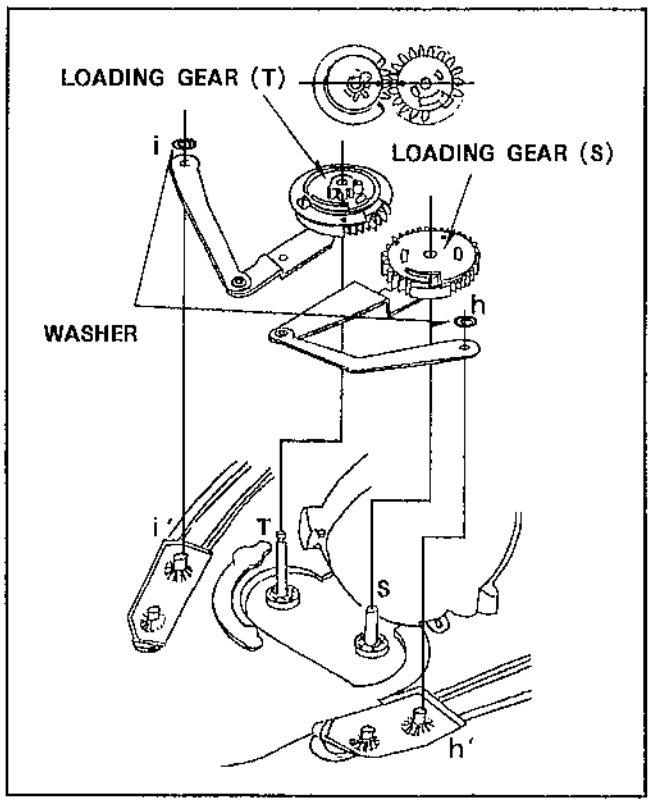


Fig.M41

4-7. Assembly of Main Lever

1. Install the Main Lever Arm checking that the boss of arms and shafts are in correct position and mark on the Main Lever Arm is aligned with mark on the Take-up Loading Gear.
2. Insert the 2 cut washer as shown in Fig.M42.

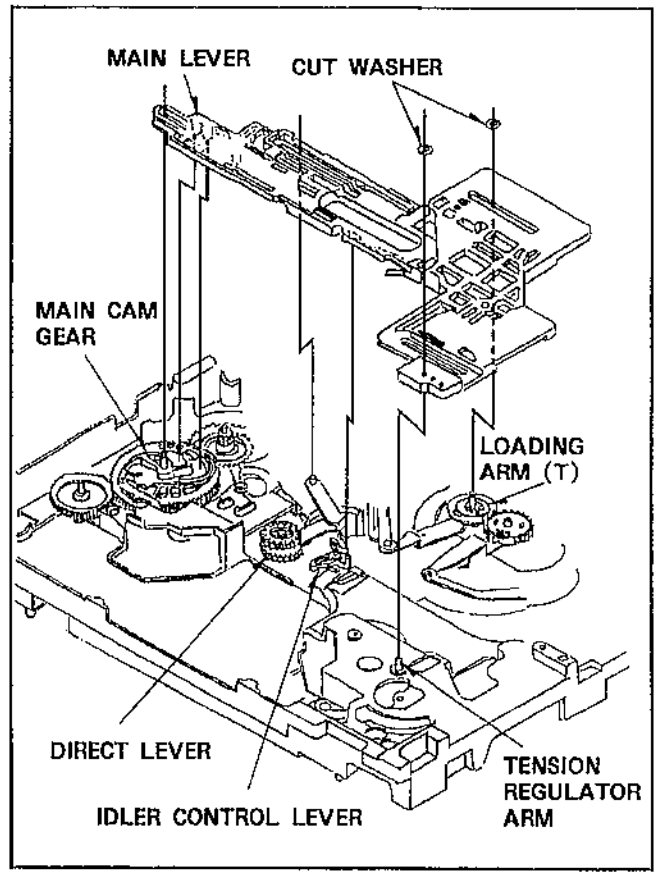


Fig.M42

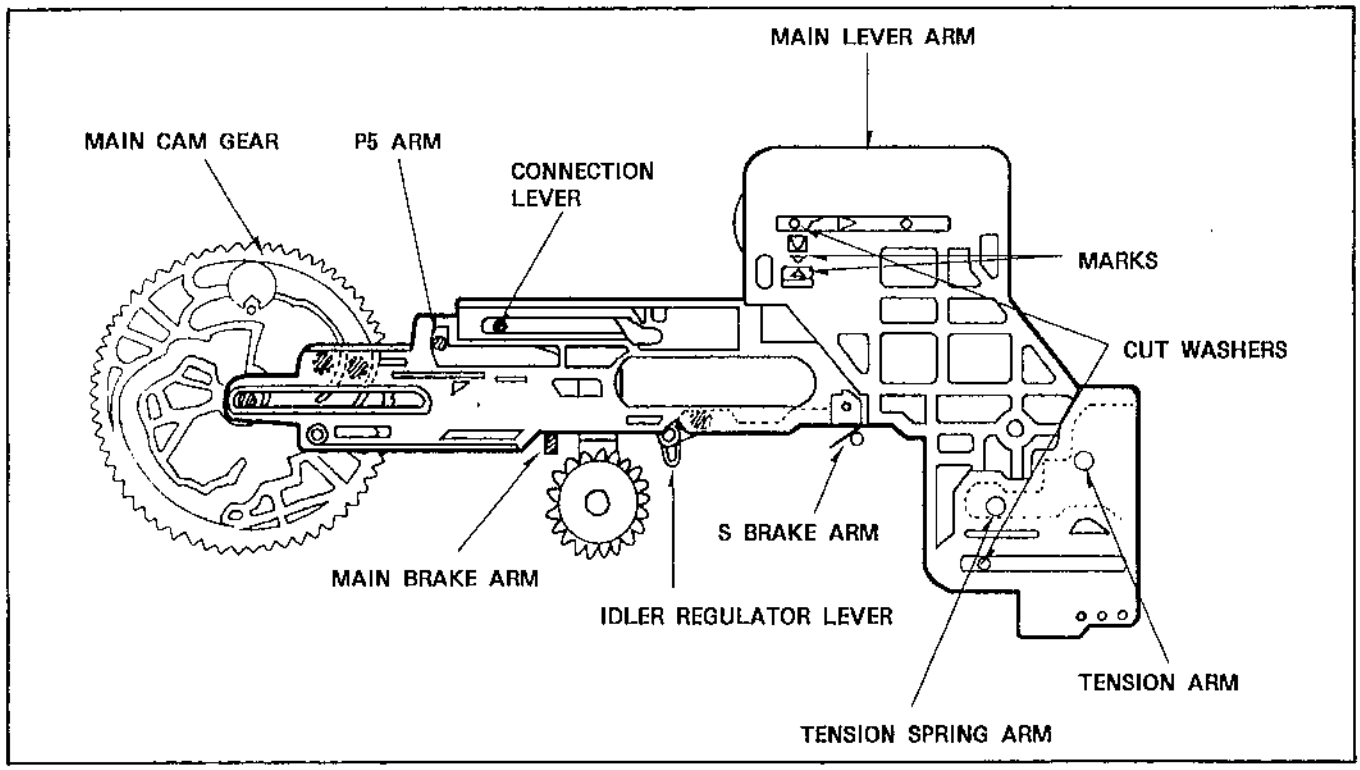


Fig.M43

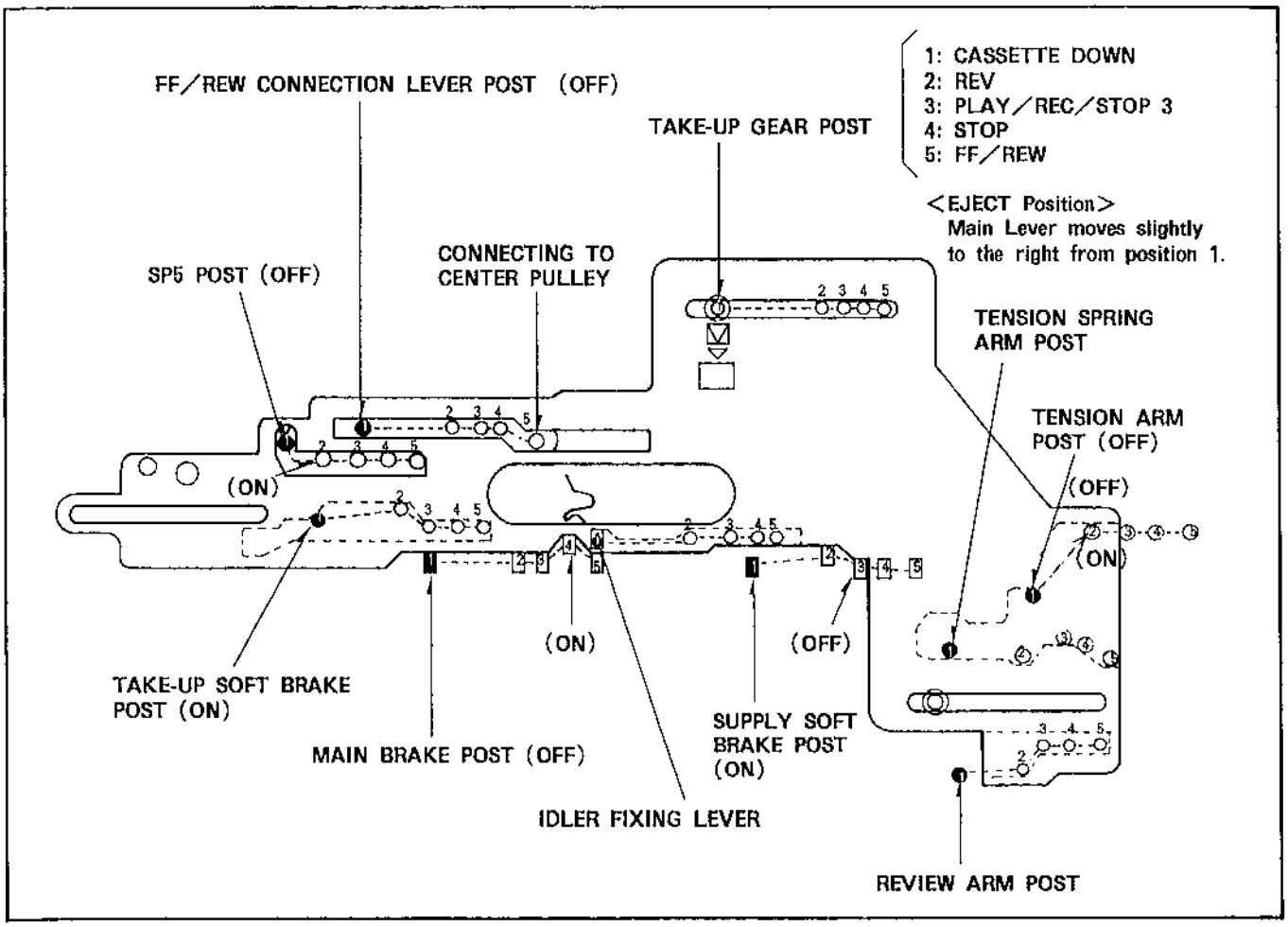


Fig.M44

4-8. Reinstall of the Cassette Compartment

1. Push the locking tabs to direction as shown in Fig.M45 and remove the Top Plate.

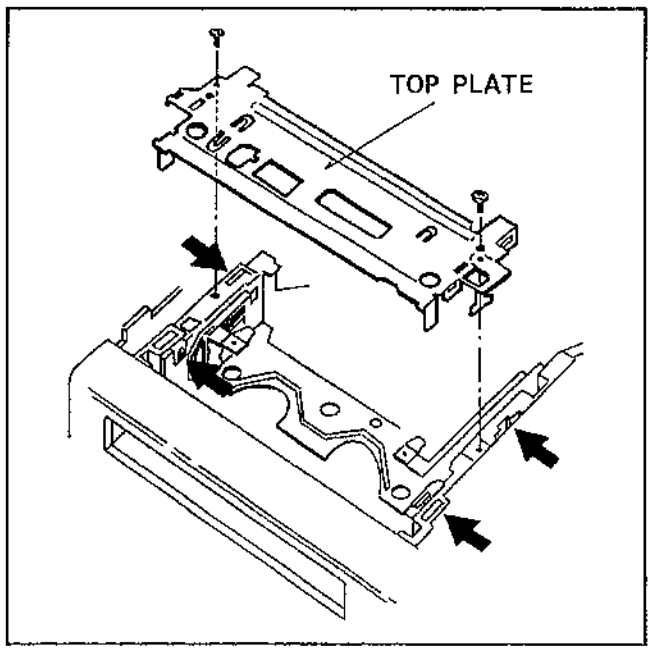


Fig.M45

2. Lift up the Cassette Holder Unit as shown in Fig.M46.

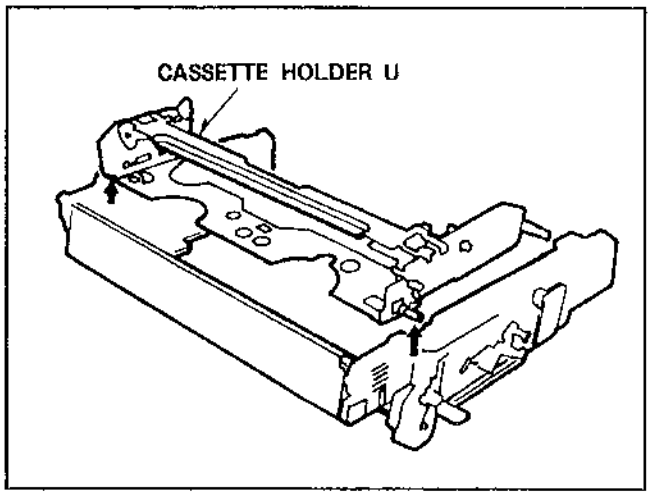


Fig.M46

3. Press the Wiper Arm to direction indicated by arrow mark so that the Wiper Arm comes to cassette down position completely as shown in Fig.M48. Confirm a triangle mark on the Wiper Arm aligns with the mark on the Rack (B) Unit.

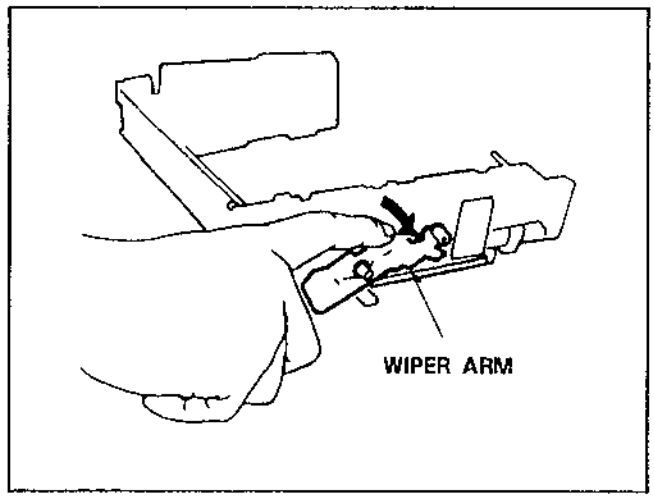


Fig.M47

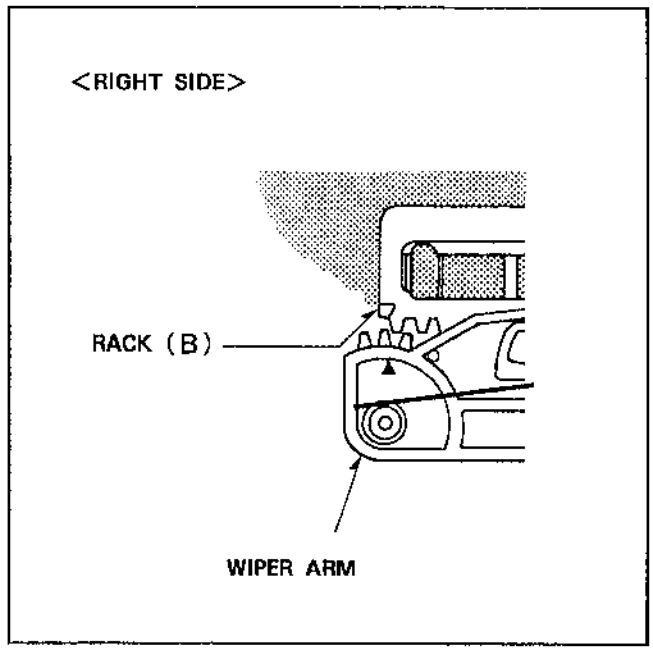


Fig.M48

4. Install the cassette compartment (without cassette holder) to the mechanical chassis so that mark on the Holder Connection Gear should line up with first tooth of the Rack Gear as shown in Fig.M49.

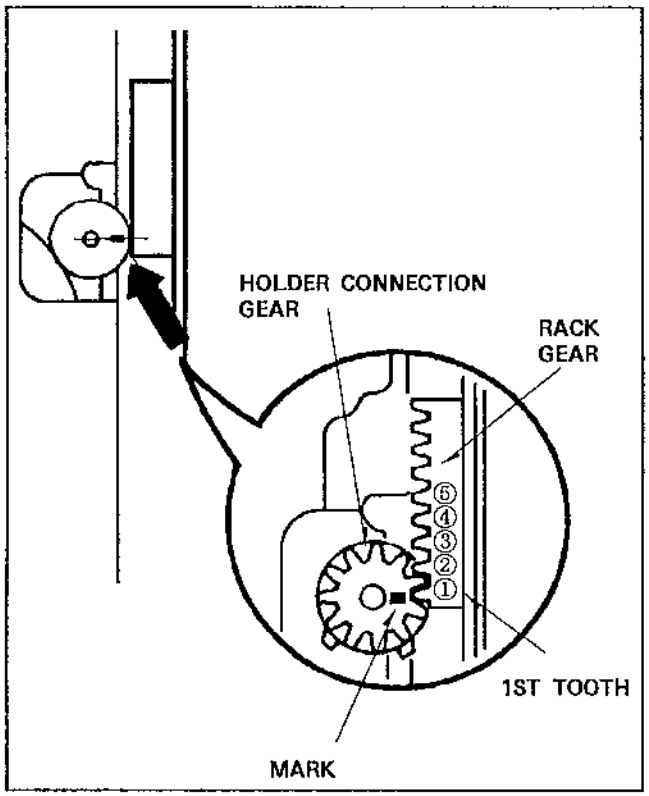


Fig.M49

5. Tighten 4 screws as shown in Fig.M50.
6. Manually move the loading mechanism toward the EJECT position by turn the Loading Motor and stop just before completion, so that the Wiper Arm straight up.
7. Install the Cassette Holder Unit in the Cassette Compartment Base as shown in Fig.M51.
8. Install the Top Plate on the Cassette Compartment Base.
9. Manually confirm that front loading and main loading run smoothly.

<NOTE>
For proper front loading, the guide pin on the opener lever should follow the upper track of the right side panel as shown in Fig.M52.

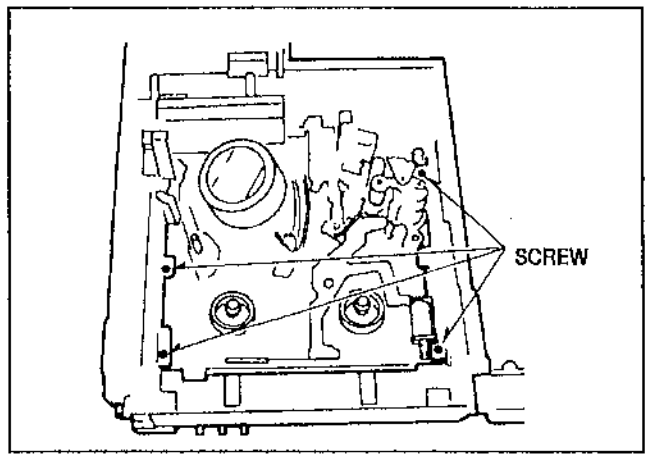


Fig.M50

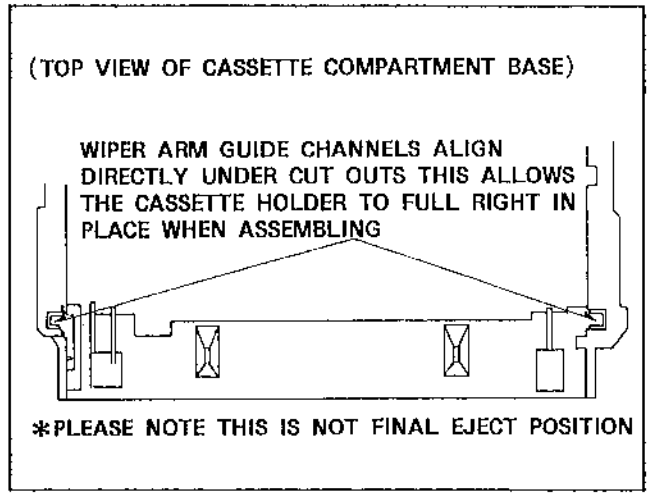

(TOP VIEW OF CASSETTE COMPARTMENT BASE)
WIPER ARM GUIDE CHANNELS ALIGN DIRECTLY UNDER CUT OUTS THIS ALLOWS THE CASSETTE HOLDER TO FULL RIGHT IN PLACE WHEN ASSEMBLING
*PLEASE NOTE THIS IS NOT FINAL EJECT POSITION

Fig.M51

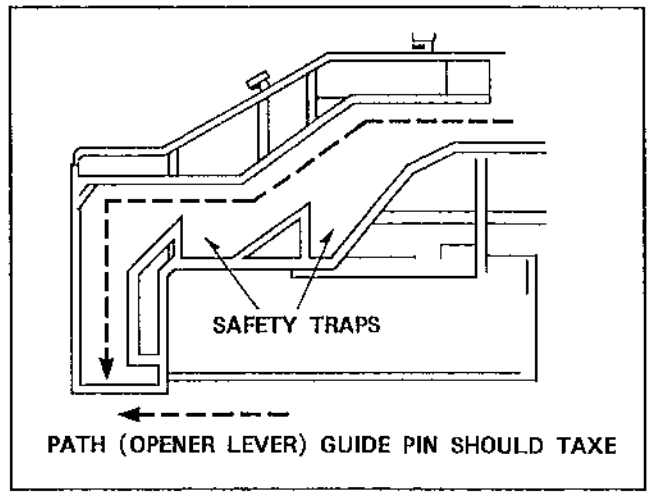


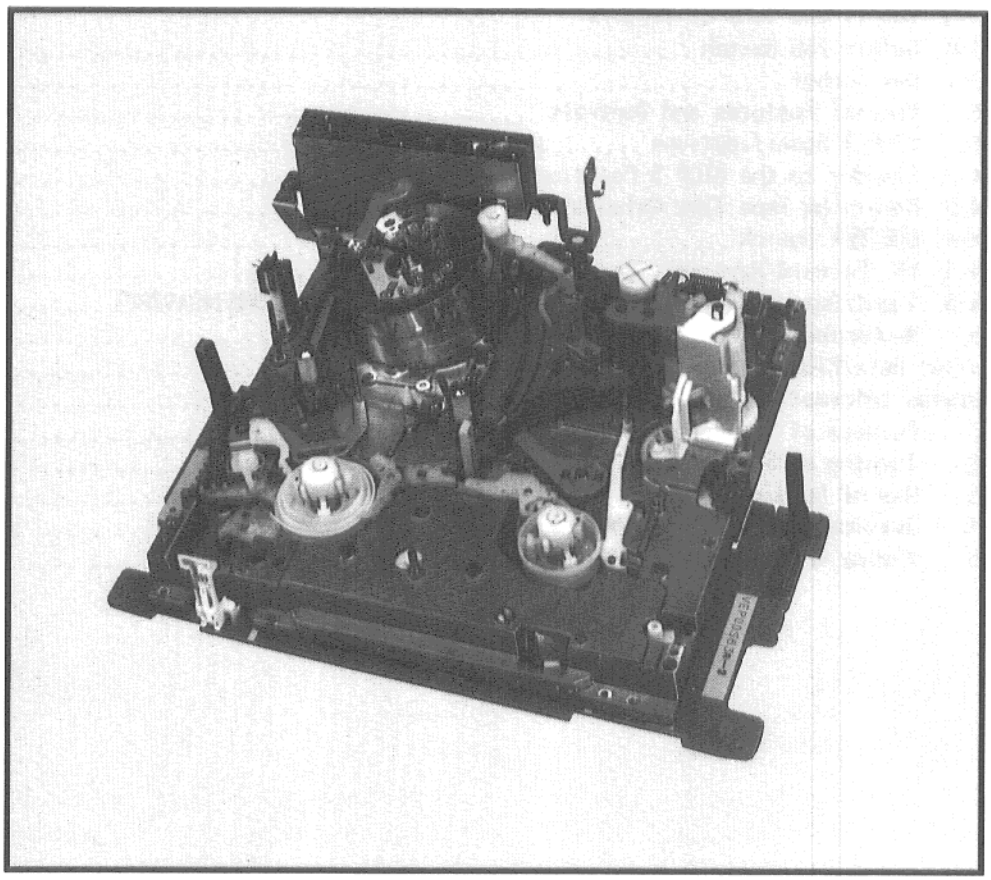
Fig.M52

ORDER NO. VRD9302D101

Training Manual

VHS Video Cassette Recorder

K-MECHANISM CHASSIS



INTRODUCTION

The K-Mechanism chassis are built in several Panasonic VHS Video Cassette Recorders from NV-SD series in 1992.

Panasonic

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1. Outline of the K Mechanism

This mechanism maintains the high performance of the G2 mechanism but with a great decrease the quantity of mounted parts, 40% less than the G2.

(1) Parts Reduction

<K Mechanism>

a) Reduction in the number of drive mechanisms through the use of a single motor to perform front loading and unit loading.

b) Direct drive of the brakes and loading gears with the multi-function main lever.

c) Elimination of sub-levers and solenoids.

<Front Loading Unit>

a) Tape end/beginning detector LED is utilized, instead of a slide switch, to reduce the wiring.

b) Elimination or combining joint parts.

c) Smaller and thinner top plate and rack.

Mechanical Types	Number of G Mech. parts	Number of G2 Mech. parts	Number of K Mech. parts	Ratio with G Mech.	Ratio with G2 Mech.
Total Number	398	445	266	−33. 1%	−40. 2%

(2) No adjustment of the following is required:

* take-up reel incline position
* P5 post height

(3) Reduced Gear Phase Position Alignments

The K mechanism has only 6 gear phase alignment positions and the G mechanism has 12 gear phase alignment positions.

1-1. Operation of the K Mechanism

The K mechanism has two motors, the loading motor and the capstan motor. The loading motor operates the front loading/unloading and posts loading/unloading. The capstan motor operates each mode. The bottom C.B.A. connects the mechanism to the system control circuit. On the C.B.A. there are take-up and Supply photosensors, Sensor LED, Mode Switch Connector, Safety Tab Switch, Supply and Take-up Reel Sensors and Loading Motor Connector.

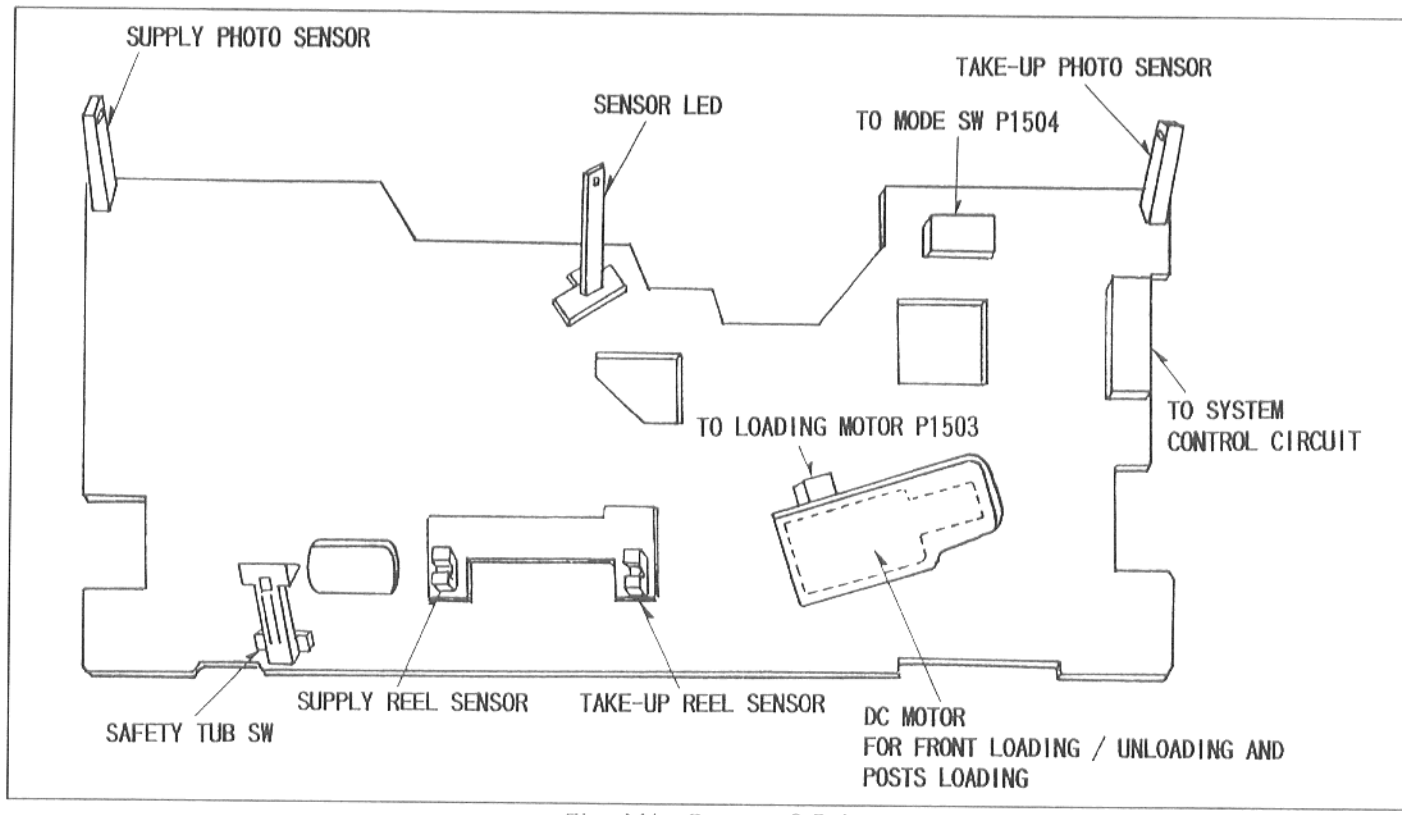


Fig. M1 Bottom C.B.A.

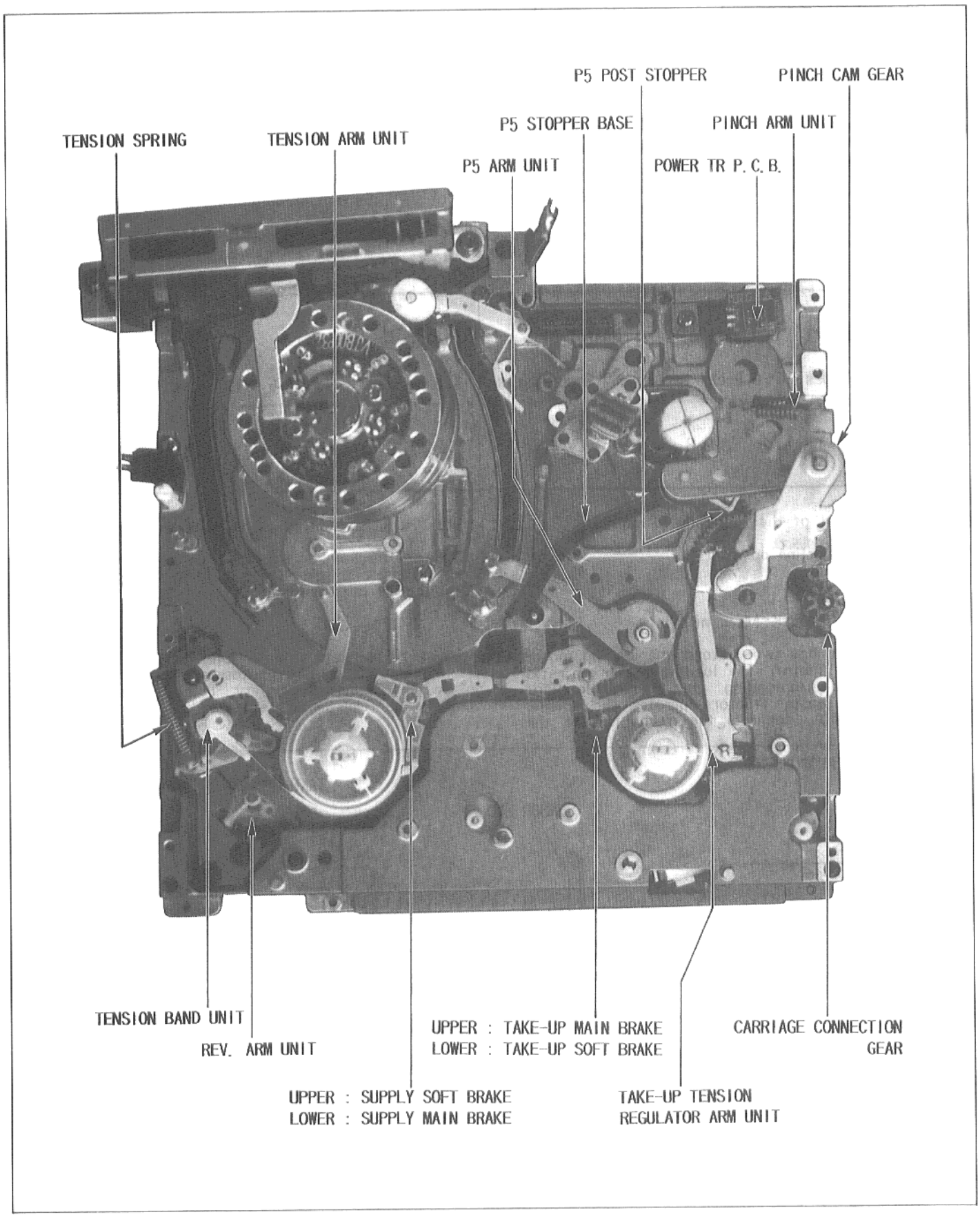


Fig. M2 Top View of K Mechanism

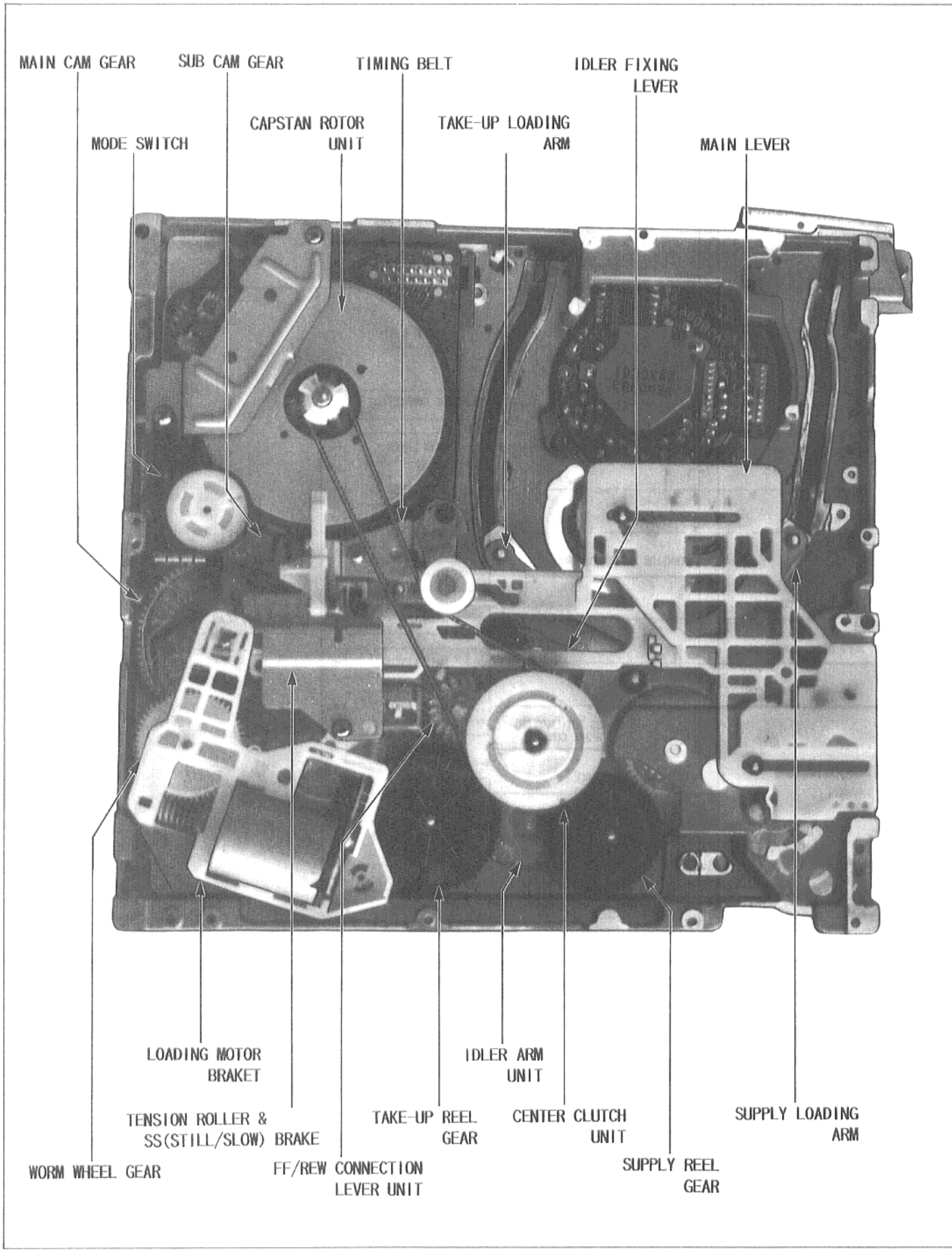


Fig. M3 Bottom View of K Mechanism

1-1-2. Loading Motor Mechanism Movement

(1) Mechanism Control for each mode.

<Example>

When a cassette is inserted into the cassette carriage, the loading motor performs the Cassette Down, Tension Arm, Soft Brake, Main Brake controls. At this time, the drive power of each control is applied as follows,

(1) Cassette Down operation <- Carriage Connection Gear <- Main Cam Gear
(2) Tension Arm operation <- Main Lever <- Main Cam Gear
(3) Soft Brake applied <- Main Lever <- Main Cam Gear
(4) Main Brake applied <- Main Lever <- Main Cam Gear

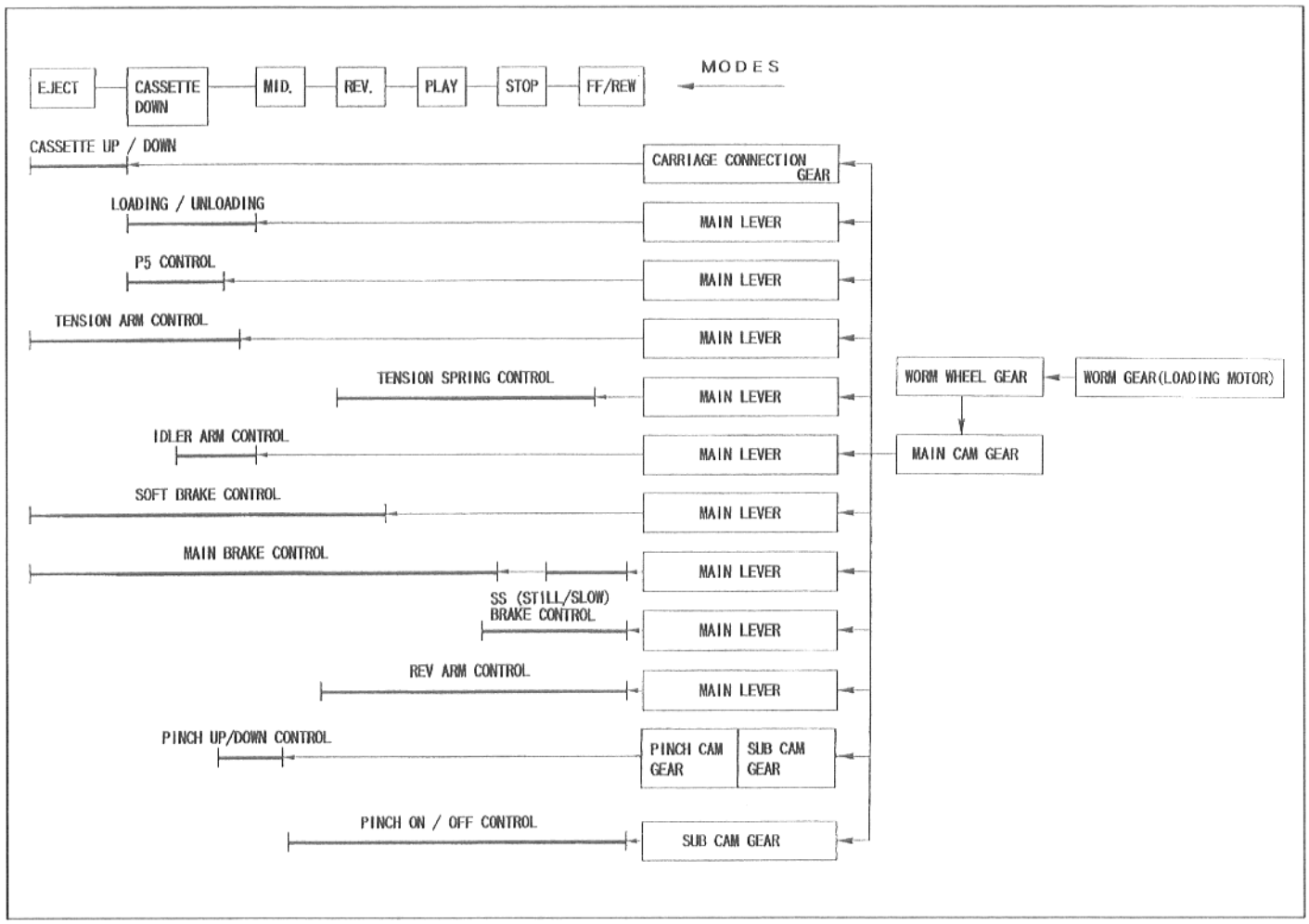


Fig. M4 Transmission Rout of Gears in each Mode

<Detail Mode Operation>

a) MID Loading/Unloading operation
b) REV 1) REV 2) REV SLOW
c) PLAY 1) PLAY 2) CUE 3) STILL
4) FWD SLOW 5) STOP 3
6) REC 7) PAUSE

NOTE:
STOP3 is the position where the Pinch Roller is on the capstan motor shaft.

d) STOP The Pinch Roller is off the capstan motor shaft.

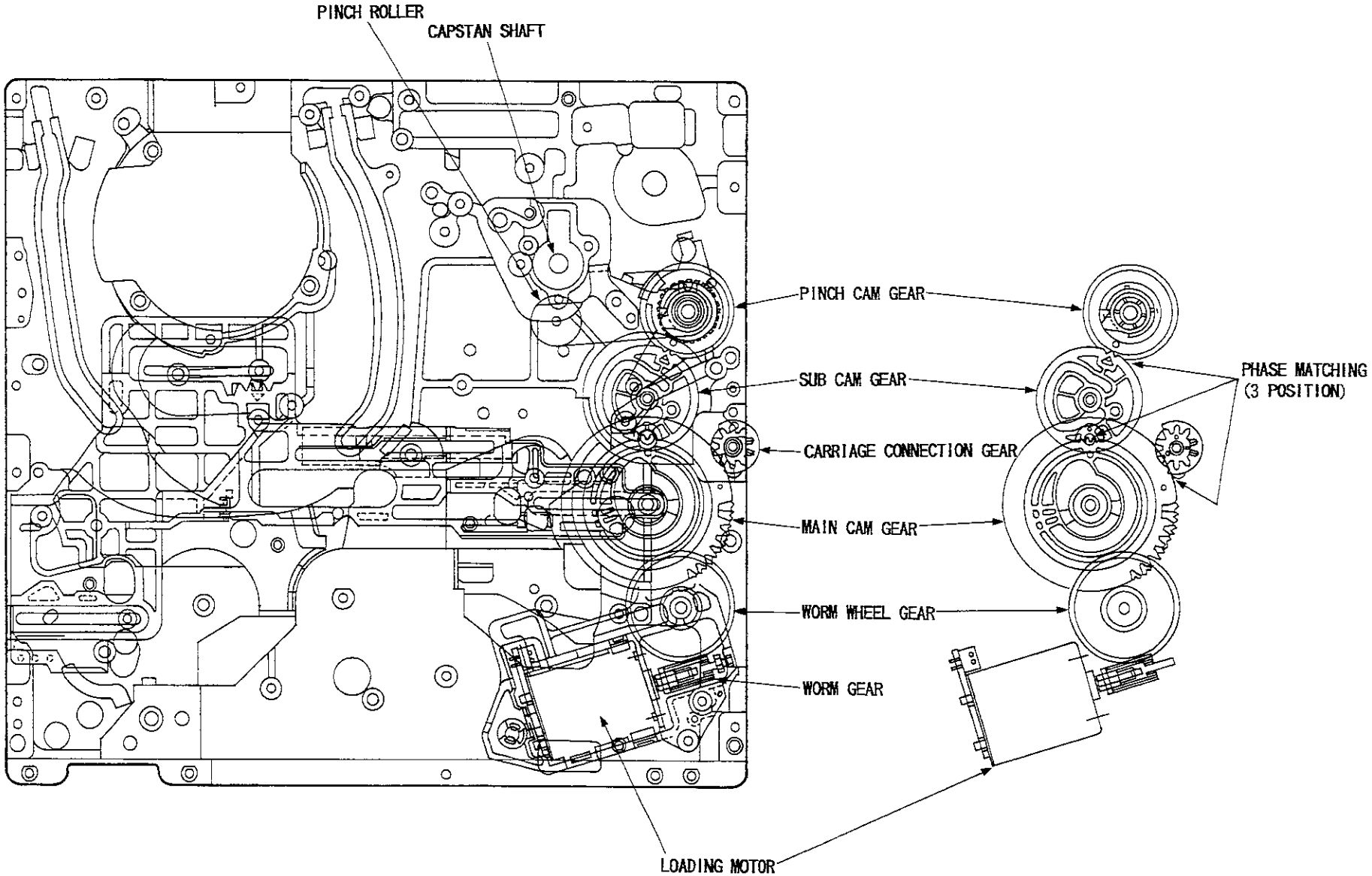


Fig. M5 Top View of Components Location

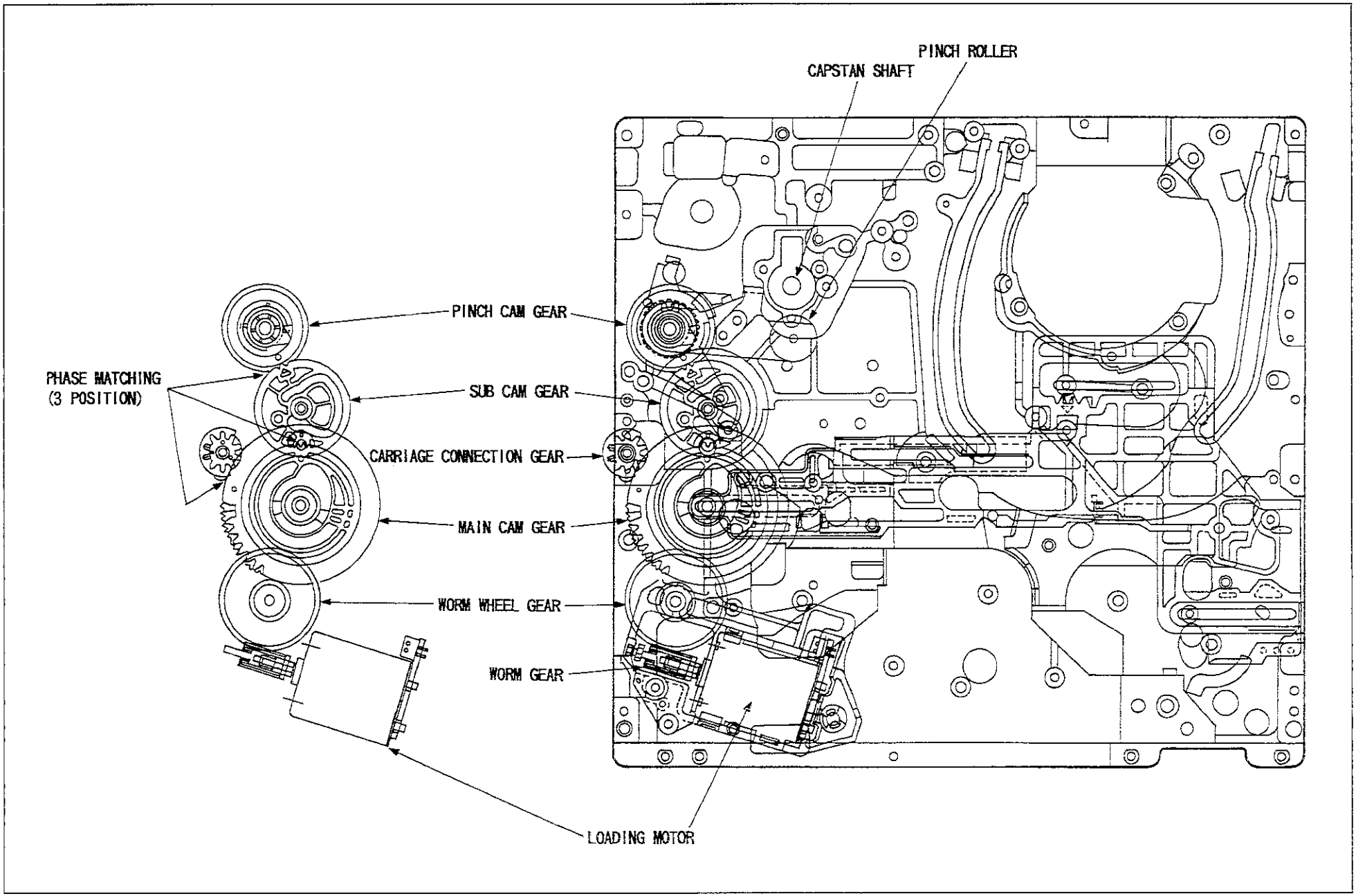


Fig. M6 Bottom View of Components Location

(2) Posts and Main Lever Positions.

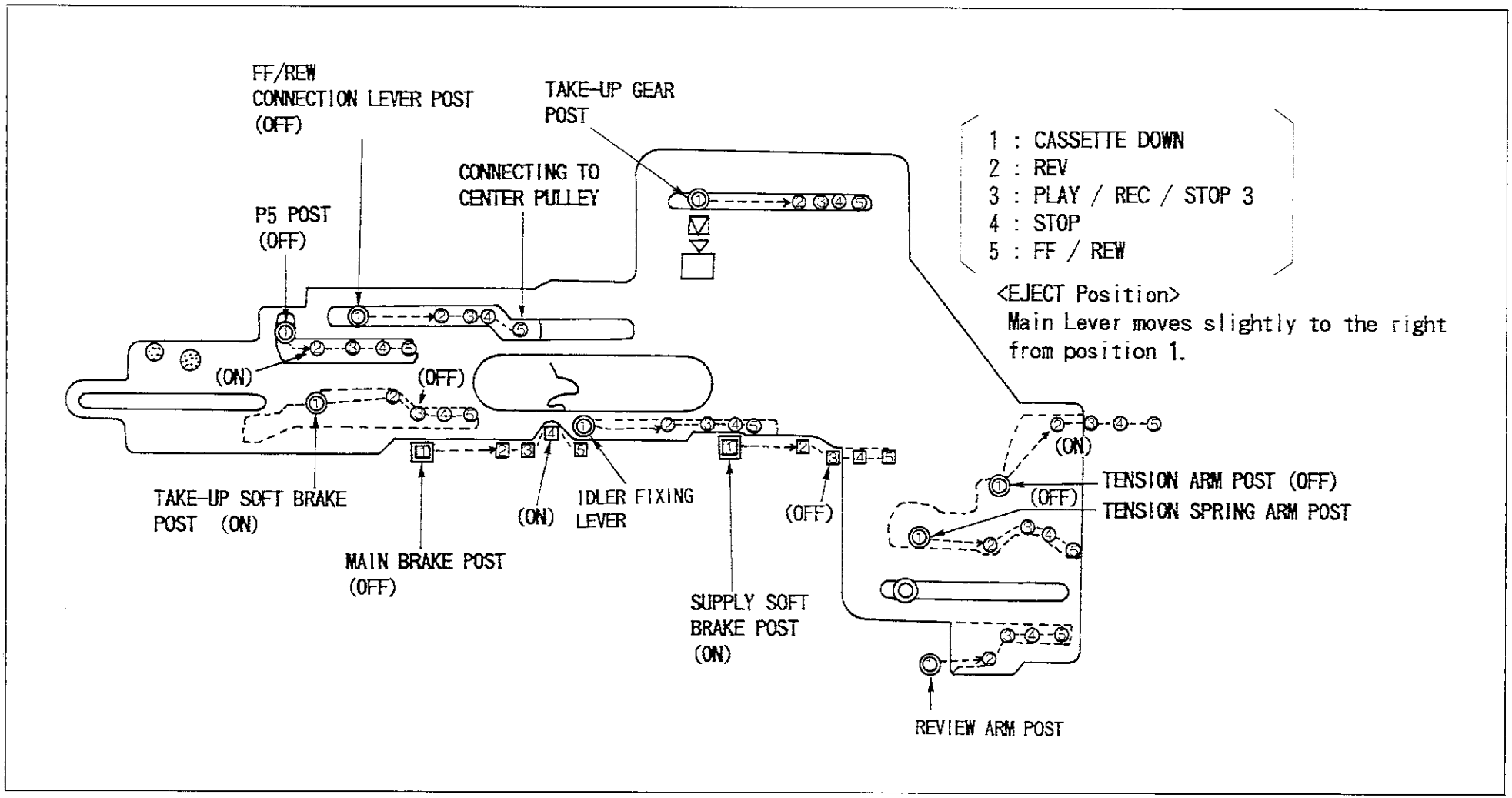


Fig. M7 Post and Main Lever Position in each Mode

1-1-3. Capstan Motor Mechanism Movement

There are 4 routes which drive power is transmitted from the capstan motor to the gears to perform mode operations as shown below.

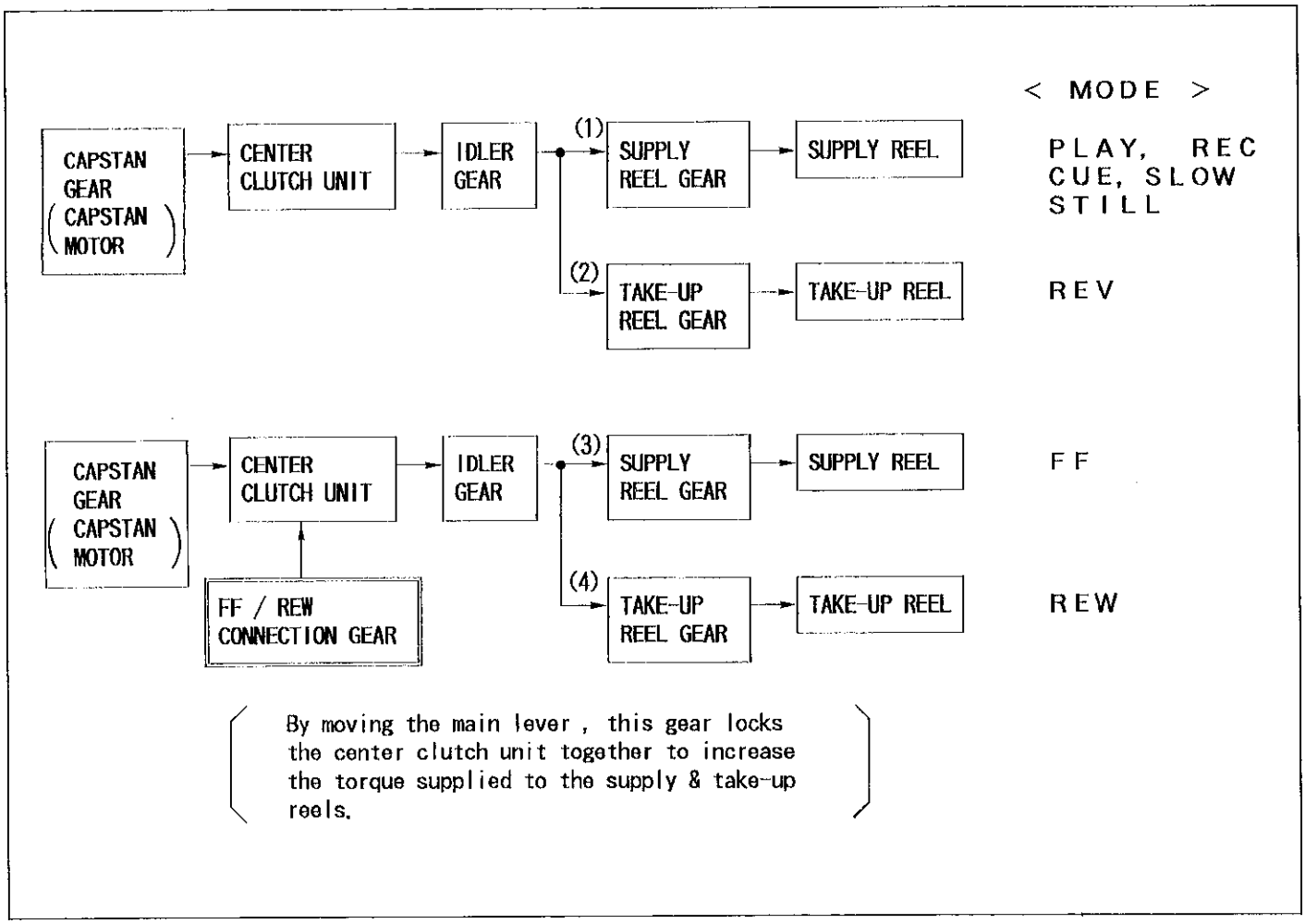


Fig. M8 Transmission Route of Gears in each Mode

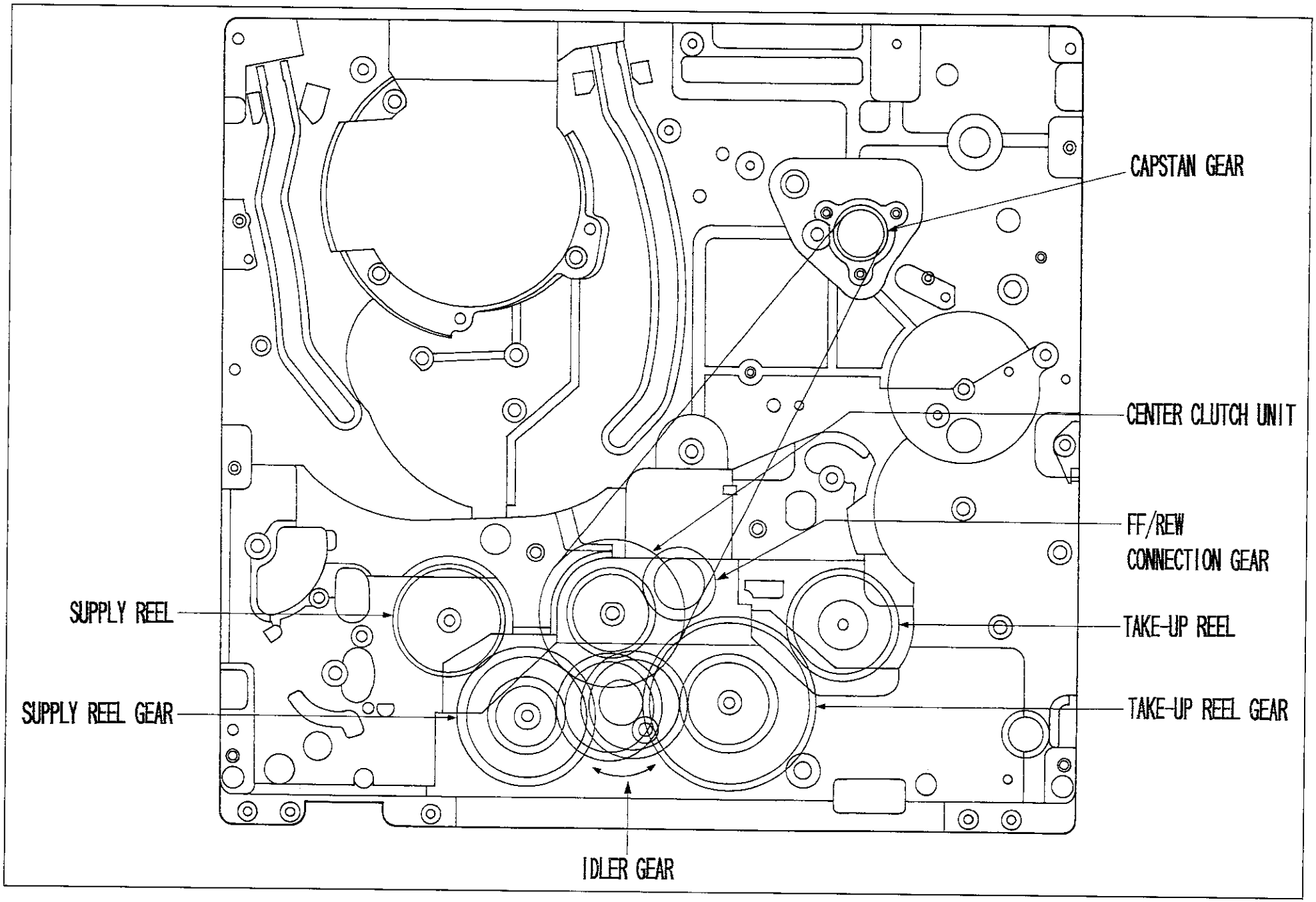


Fig. M9 Top View of Components Location

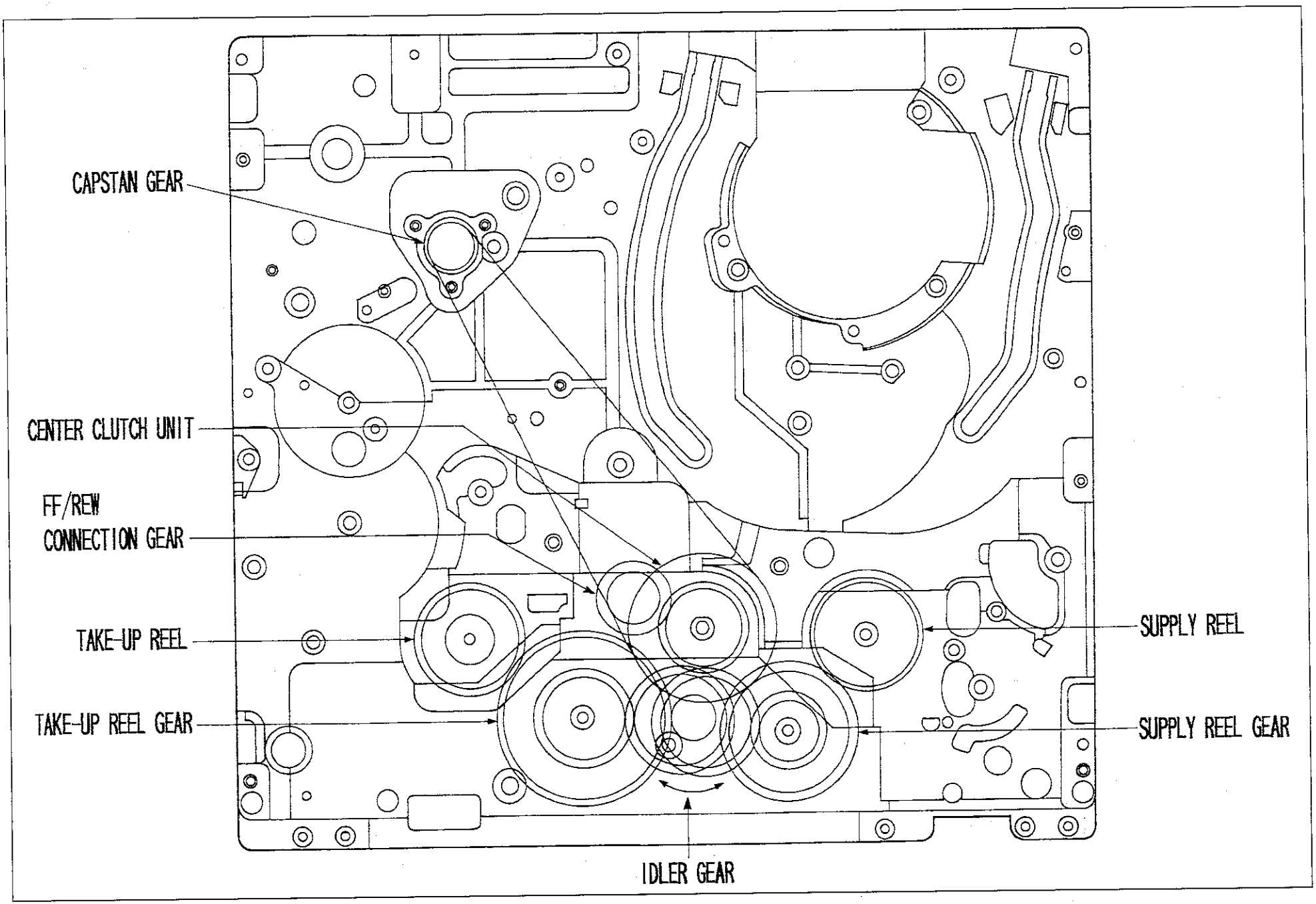


Fig. M10 Bottom View of Components Location

1-2. View of Phase Alignment

The gear phase alignment is perform in the cassette down position and is crucial for the K Mechanism to operate correctly.

(1) Top View of Gear Phase Alignment Marks.
There are alignment marks on the Pinch Cam Gear and Sub Cam Gear. There is one alignment mark on the carriage connection gear.

(2) Bottom View of Gear Phase Alignment Marks.
There are alignment marks on Take-up Loading Gear and Supply Loading Gear.
There is an additional mark on the Take-up Loading Gear that aligns with the mark on the main lever. There are alignment marks on the Main Cam Gear and the Sub Cam Gear. The mode switch gear mark aligns with a notch in the mode switch frame.

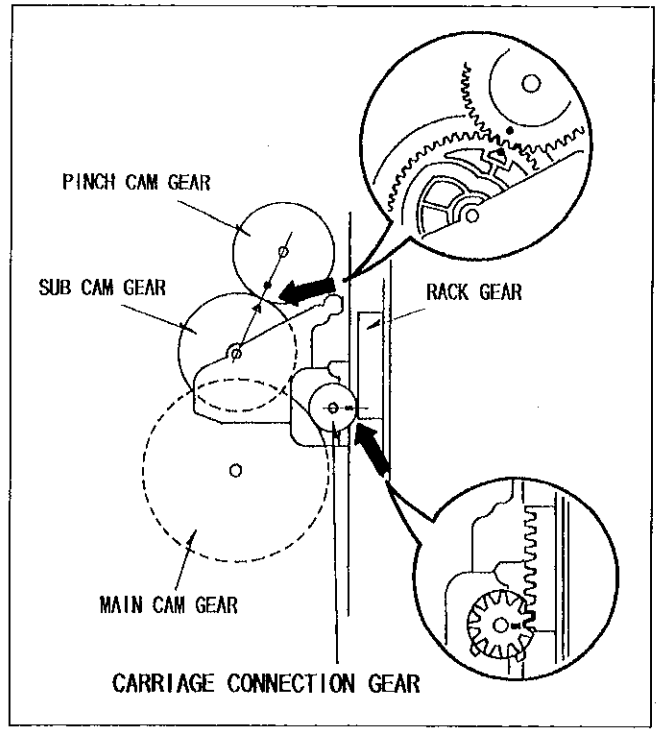


Fig. M11 Top View of Gear Phase Alignment

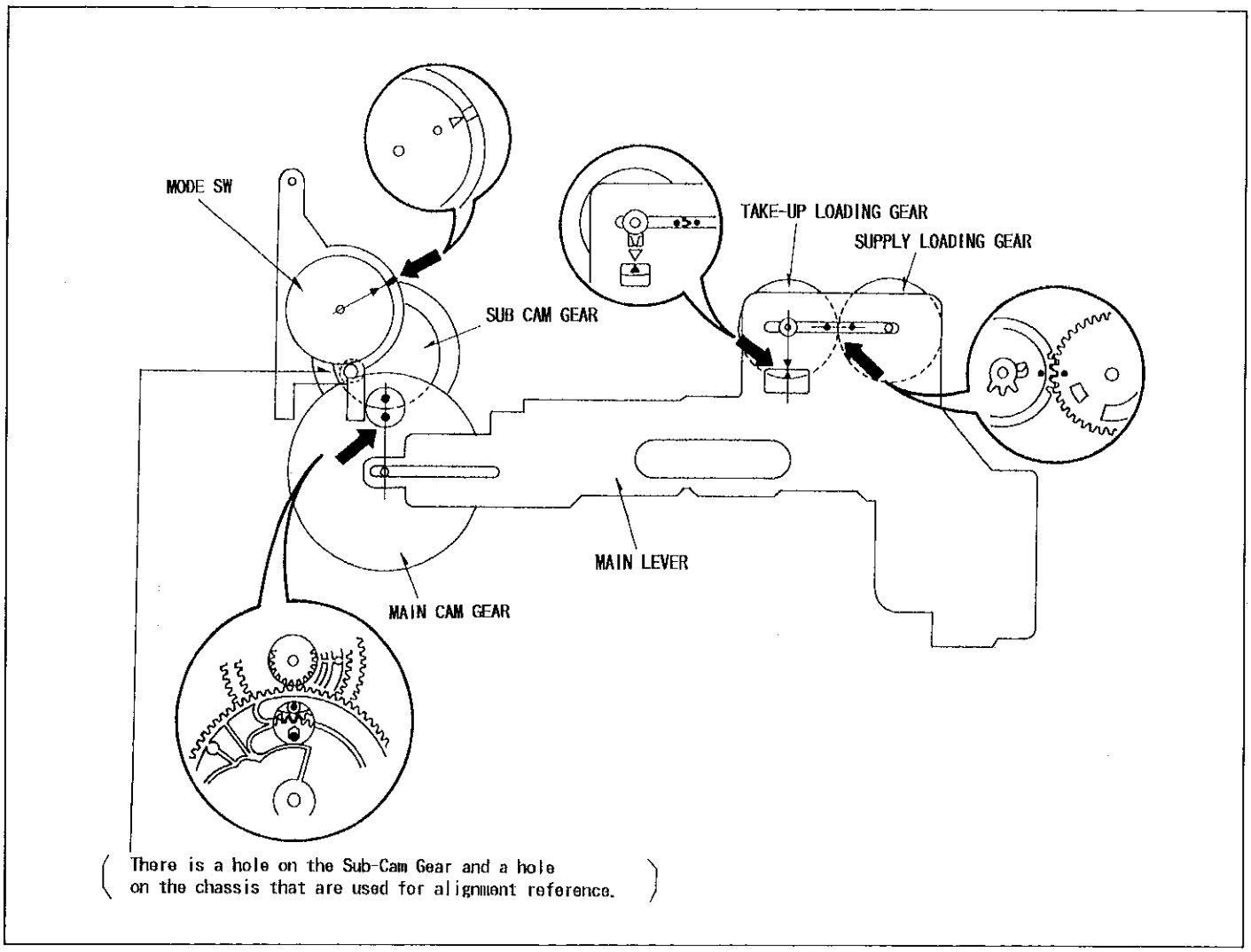

MODE SW
TAKE-UP LOADING GEAR
SUPPLY LOADING GEAR
SUB CAM GEAR
MAIN LEVER
MAIN CAM GEAR
There is a hole on the Sub-Cam Gear and a hole on the chassis that are used for alignment reference.

Fig. M12 Bottom View of Gear Phase Alignment

1-2-1. Phase Alignment in the Eject Position

When assembling a cassette carriage in an unit, align the phase as shown in Fig.M13.

(1) Phase alignment of Carriage Connection Gear

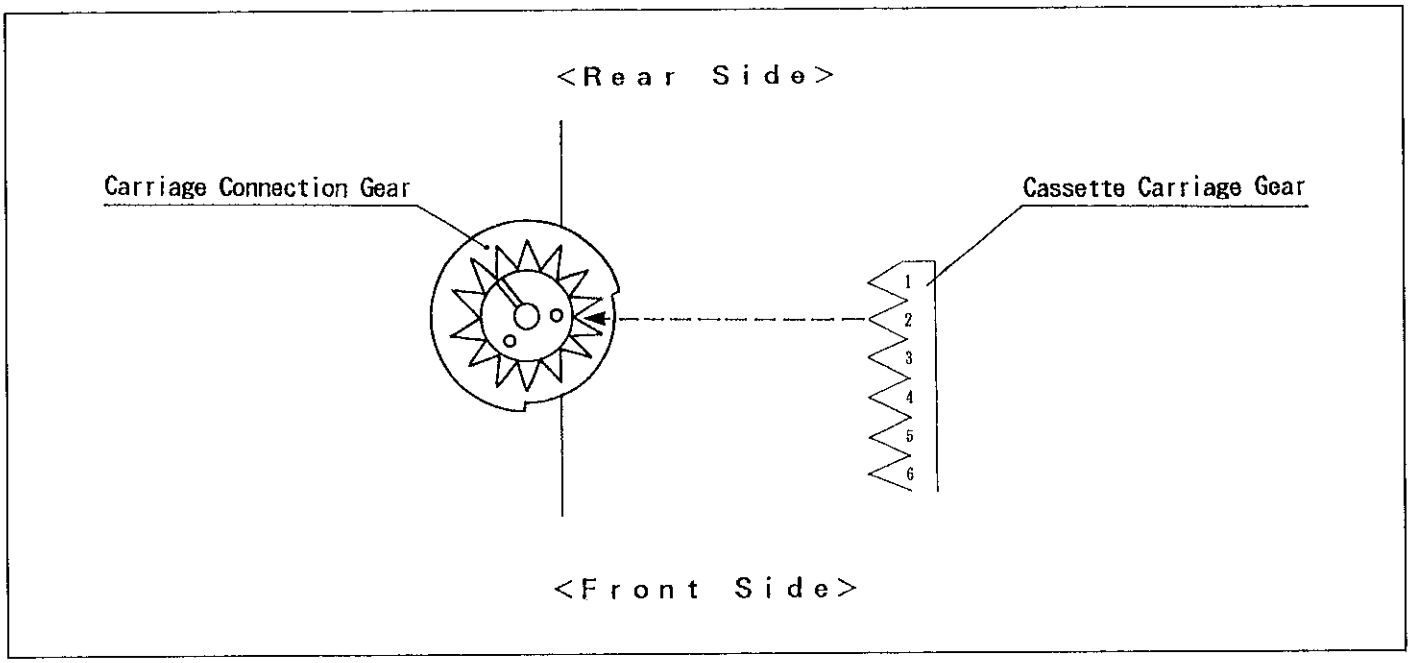


Fig. M13 Phase Alignment of Carriage Connection Gear

(2) Position of Mode Switch Arrow

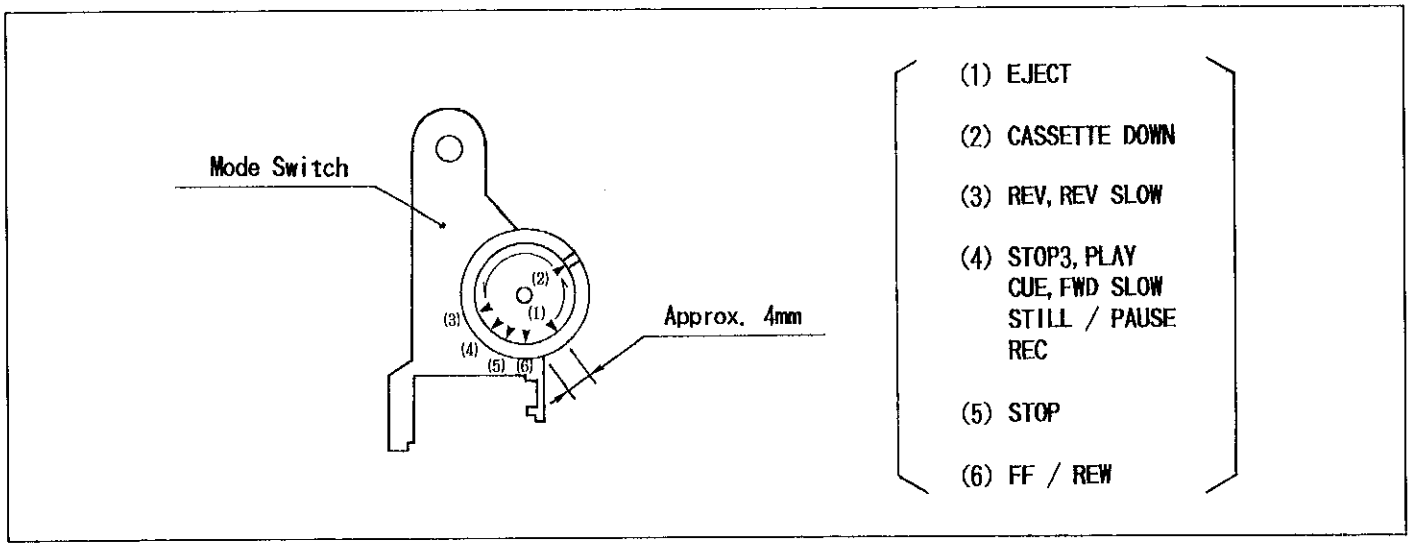


Fig. M14 Position of Mode Switch Arrow

1-3. Service Note

(1) Eject Operation

The mechanical Eject Operation works as shown in Fig.M15.

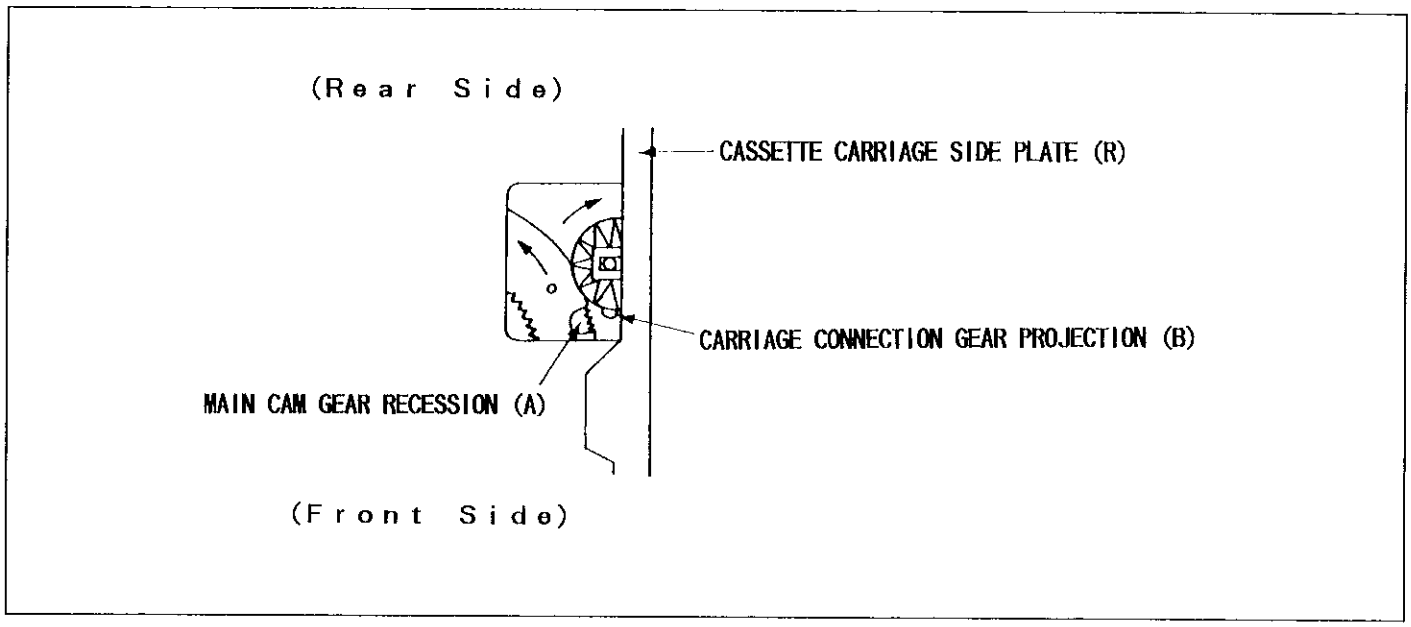


Fig. M15 Top View of Eject Operation

The main cam gear rotates in the direction of the arrow. The projection (B) of the carriage connection gear engages with the recession (A) of the main cam gear. The carriage connection gear rotates in the direction of the arrow to perform the Eject operation.

<NOTE>

If the Eject operation is performed without the cassette carriage installed while repairing or making the mechanical phase alignment, the main cam gear will not engage with the carriage connection gear and the carriage connection gear will not rotate.
For performing the Eject operation with the cassette carriage not installed, it is necessary to rotate to the carriage connection gear by hand in the direction of the arrow.

2. System Control

The new products such as NV-SD series employing K-Mechanism use a new microprocessor (Ref. No. IC6001 : MN67434VRRV / MN67434VRSA. The system control consists of 4 sections as follows.

(1) Serial Data Transmission
(2) Mechanism Control
(3) Safety
(4) Special Features and Controls

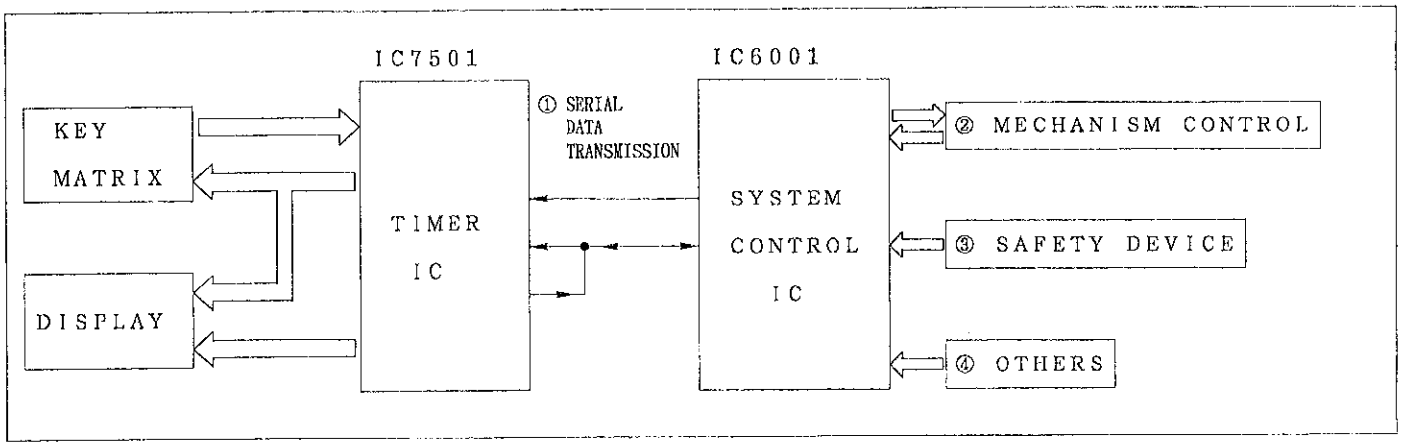


Fig. S1 Overall Block Diagram of System Control Circuit

2-1. SERIAL DATA TRANSMISSION CHART

The system control command data is transmitted as serial data to reduce the amount of transmission circuitry required. The format of serial data is shown in Fig.S2. A Serial clock is transmitted with the data for read timing reference.

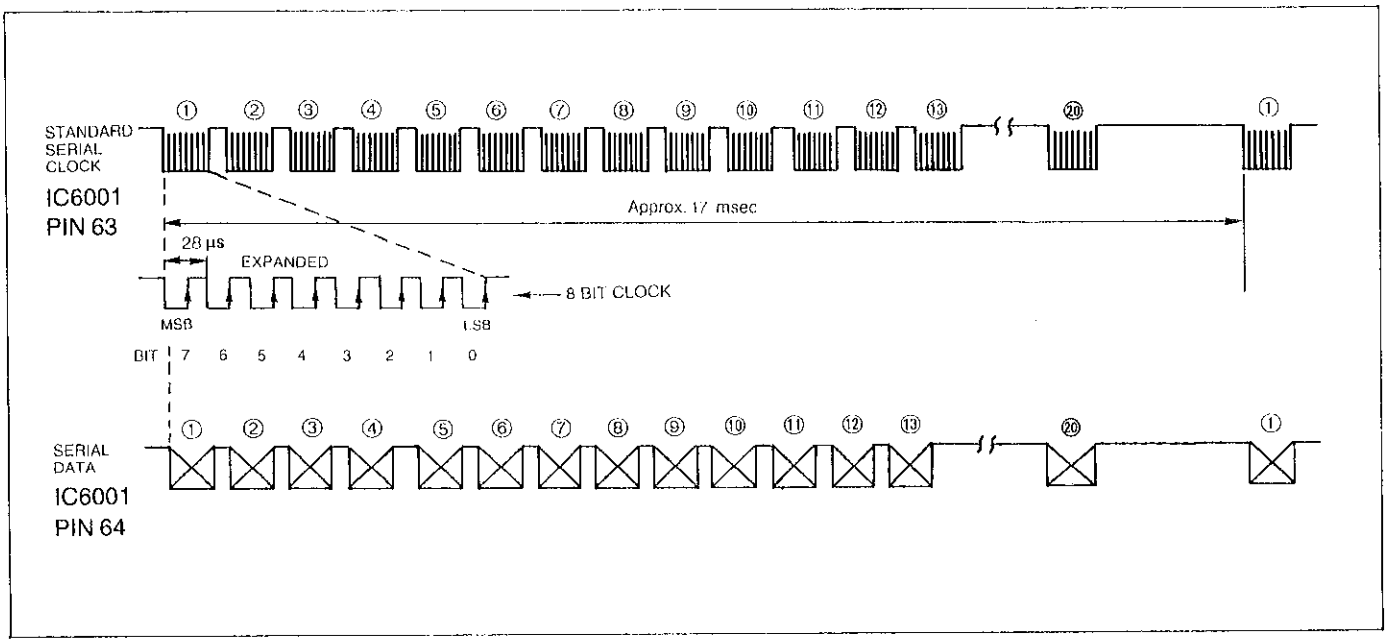


Fig. S2 Format of Serial Data and Clock

DATA NO.	DATA TRANSMISSION	CONTENTS OF DATA	DATA NO.	DATA TRANSMISSION	CONTENTS OF DATA
1	SYSTEM CONTROL IC6001 → TEMER IC7501	Tape Speed, Memory/Repeat/Search etc	11	SYSTEM CONTROL IC6001 → TEMER IC7501	Jog/VISS Code etc
2	TIMER IC7501 → SYSTEM CONTROL IC6001	Wireless Remoto & Key Control Code	12	SYSTEM CONTROL IC6001 → TEMER IC7501	Service Information Display etc
3	TIMER IC7501 → SYSTEM CONTROL IC6001	Timer Instructions code	13	SYSTEM CONTROL IC6001 → TEMER IC7501	OSD Code
4	Not Used		14	TIMER IC7501 → SYSTEM CONTROL IC6001	Jog/Shuttle Code
5	SYSTEM CONTROL IC6001 → TIMER IC7501	Deck Mode etc	15	Not Used	
6	SYSTEM CONTROL IC6001 → TIMER IC7501	Power ON/OFF, Cassette IN/OUT Code etc	16	Not Used	
7	SYSTEM CONTROL IC6001 → TIMER IC7501	Counter/Tape Remaining Code	17	Not Used	
8	SYSTEM CONTROL IC6001 → TIMER IC7501	Counter/Tape Remaining Code	18	Not Used	
9	SYSTEM CONTROL IC6001 → TIMER IC7501	Counter/Tape Remaining Code	19	Not Used	
10	TIMER IC7501 → SYSTEM CONTROL IC6001	Counter ON/OFF Tape Select Code etc	20	Not Used	

Fig. S3 Data Transmission Flow and Contents of Data

The contents of serial data transmission are shown in Fig.S4-1~13.

NO. 1 TRANSMISSION	INFORMATION	CONTENTS
BIT 7 & BIT 6	TAPE SPEED DISPLAY	BIT 7 / BIT 6 / DISPLAY 0 / 0 / 'SP' MARK DISPLAY 0 / 1 / 'LP' MARK DISPLAY 1 / 0 / 'SLP' MARK DISPLAY 1 / 1 / NO INDICATION
BIT 5 & BIT 4	COUNTER DISPLAY	BIT 5 / BIT 4 / DISPLAY 0 / 0 / TAPE REMAIN TIME DISPLAY 0 / 1 / DEW MODE DISPLAY 1 / 0 / PROGRAME MODE DISPLAY 1 / 1 / LINEAR COUNTER MODE DISPLAY
BIT 3 & BIT 2	(MEMORY/RESET/ SEARCH DISPLAY)	BIT 3 / BIT 2 / DISPLAY 0 / 0 / NO INDICATION 0 / 1 / NO INDICATION 1 / 0 / 'R' MARK DISPLAY 1 / 1 / 'S' MARK DISPLAY
BIT 1 & BIT 0	COUNTER TRANSMISSION DATA	BIT 1 / BIT 0 / DISPLAY 0 / 0 / TAPE REMAIN TIME 0 / 1 / DEW DATA 1 / 0 / PROG. NUMBER DATA 1 / 1 / LINEAR COUNTER DATA

Fig. S4-1 Serial Data No.1 (IC6001->IC7501)

TRANSMISSION NO. 2					
NO	FUNCTION	CODE BIT 7~BIT 0	NO	FUNCTION	CODE BIT 7~BIT 0
1	STOP	00000000	12	TAPE REMAINING	01010101
2	EJECT	00000001	13	AUTO TRACKING ON	10110000
3	REW(REVIEW)	00000010	14	TRACKING UP	10110001
4	FF(CUE)	00000011	15	TRACKING DOWN	10110010
5	STILL/PAUSE	00000110	16	RVS. PLAY	00001011
6	RECORD	00001000	17	INSERT	10110011
7	AUDIO DUBBING	00001001	18	AUDIO SELECT	00110011
8	PLAY	00001010	19	JOG ON	10000000
9	POWER ON/OFF	00111101	20	SERVICE MODE	11111100
10	ZERO STOP	11110101	21	MEMORY	01010011
11	COUNTER RESET	01010100			

Fig. S4-2 Serial Data No.2 (IC7501->IC6001)

<table>
<tr><th>NO. 3
TRANSMISSION</th><th>INFORMATION</th><th>CONTENTS</th></tr>
<tr><td>BIT 7</td><td>ANT OUT</td><td>
<table>
<tr><th>BIT 7</th><th>INFORMATION</th></tr>
<tr><td>0</td><td>TV</td></tr>
<tr><td>1</td><td>VYR</td></tr>
</table>
</td></tr>
<tr><td>BIT 6</td><td>REMOTE CONTROLLER
SELECTION</td><td>
<table>
<tr><th>BIT 6</th><th>INFORMATION</th></tr>
<tr><td>0</td><td>TIMER MODE</td></tr>
<tr><td>1</td><td>SYSTEM CONTROL MODE</td></tr>
</table>
</td></tr>
<tr><td>BIT 5
& BIT 4</td><td>TAPE SPEED
DATA FROM
SP/LP SELECT SW</td><td>
<table>
<tr><th>BIT 5</th><th>BIT 4</th><th>TAPE SPEED DATA</th></tr>
<tr><td>0</td><td>0</td><td>SP</td></tr>
<tr><td>0</td><td>1</td><td>LP</td></tr>
<tr><td>1</td><td>0</td><td>SLP(EP)</td></tr>
<tr><td>1</td><td>1</td><td>NOT USED</td></tr>
</table>
</td></tr>
<tr><td>BIT 3
~
BIT 0</td><td>TIMER
COMMAND
CODE</td><td>
<table>
<tr><th>BIT 3~BIT 0</th><th>COMMAND</th></tr>
<tr><td>0001</td><td>TIMER STAND-BY</td></tr>
<tr><td>0011</td><td>TIMER REC PAUSE</td></tr>
<tr><td>0101</td><td>TIMER REC</td></tr>
<tr><td>0111</td><td>OTR REC</td></tr>
</table>
</td></tr>
</table>

Fig. S4-3 Serial Data No.3 (IC7501->IC6001)

<table>
<tr><th>NO. 5
TRANSMISSION</th><th>INFORMATION</th><th>CONTENTS</th></tr>
<tr><td>BIT 7</td><td>SAFETY TAB
IS ATTACHED
OR NOT</td><td>
<table>
<tr><th>BIT 7</th><th>INFORMATION</th></tr>
<tr><td>0</td><td>YES</td></tr>
<tr><td>1</td><td>NO</td></tr>
</table>
</td></tr>
<tr><td>BIT 6</td><td>CHANNEL
LOCK
(DELAYED REC)</td><td>
<table>
<tr><th>BIT 6</th><th>INFORMATION</th></tr>
<tr><td>0</td><td>NO CHANNEL LOCK</td></tr>
<tr><td>1</td><td>CHANNEL KOCK</td></tr>
</table>
</td></tr>
<tr><td>BIT 5</td><td>EE / VV
DATA</td><td>
<table>
<tr><th>BIT 5</th><th>INFORMATION</th></tr>
<tr><td>0</td><td>EE</td></tr>
<tr><td>1</td><td>VV</td></tr>
</table>
</td></tr>
<tr><td>BIT 4</td><td>PROCESS
FLAG</td><td>
<table>
<tr><th>BIT 4</th><th>INFORMATION</th></tr>
<tr><td>0</td><td>NOT USED</td></tr>
<tr><td>1</td><td>DURING MODE TRANSIT</td></tr>
</table>
</td></tr>
<tr><td>BIT 3
~
BIT 0</td><td>DECK MODE</td><td>
<table>
<tr><th>MODE</th><th>CODE</th><th>MODE</th><th>CODE</th></tr>
<tr><td>STOP</td><td>0000</td><td>PLAY</td><td>1000</td></tr>
<tr><td>EJECT</td><td>0001</td><td>STILL</td><td>1001</td></tr>
<tr><td>REW</td><td>0010</td><td>REC</td><td>1010</td></tr>
<tr><td>FF</td><td>0011</td><td>REC PAUSE</td><td>1011</td></tr>
<tr><td>REV</td><td>0100</td><td>AUDIO DUBBING</td><td>1100</td></tr>
<tr><td>CUE</td><td>0101</td><td>A. DUB PAUSE</td><td>1101</td></tr>
<tr><td>SLOW</td><td>0110</td><td>INSERT</td><td>1110</td></tr>
<tr><td>POWER OFF</td><td>0111</td><td>INSERT PAUSE</td><td>1111</td></tr>
</table>
</td></tr>
</table>

Fig. S4-4 Serial Data No.5 (IC6001->IC7501)

NO. 6 TRANSMISSION	INFORMATION	CONTENTS	
		0	1
BIT 7	FLAG	NORMAL SPEED FLAG	DOUBLE SPEED FLAG
BIT 6	POWER FLAG	POWER OFF	POWER ON
BIT 5	CASSETTE IN/OUT	CASSETTE OUT	CASSETTE IN
BIT 4	NOT USED		
BIT 3	BUZZER	SOUND	NO SOUND
BIT 2	REVERSE PB FLAG	NORMAL PB	REVERSE PB
BIT 1	COMPULSIVE COUNTER DISPLAY	NORMAL DISPLAY	COMPULSIVE COUNTER DISPLAY
BIT 0	SLOW FLAG	DURING MODE TRANSIT TO SLOW MODE	NORMAL PB

Fig. S4-5 Serial Data No.6 (IC6001->IC7501)

NO. 7 TRANSMISSION	INFORMATION
BIT 7~BIT 0	HOUR DISPLAY

Fig. S4-6 Serial Data No.7 (IC6001->IC7501)

NO. 8 TRANSMISSION	INFORMATION
BIT 7~BIT 0	MINUTE DISPLAY

Fig. S4-7 Serial Data No.8 (IC6001->IC7501)

NO. 9 TRANSMISSION	INFORMATION
BIT 7~BIT 0	SECOND DISPLAY

Fig. S4-8 Serial Data No.9 (IC6001->IC7501)

NO. 10 TRANSMISSION	INFORMATION	CONTENTS	
		0	1
BIT 7	COUNTER DISPLAY	EXCEPT COUNTER DISPLAY	DURING COUNTER DISPLAY
BIT 6	NOT USED		
BIT 5 & BIT 4	TAPE SELECTION		

BIT 5	BIT 4	MODE	
		NTSC	PAL
0	0	~T120	E195
0	1	T140~T180	E240
1	0	NOT USED	E260
1	1	NOT USED	

BIT 3 & BIT 0	NOT USED

Fig. S4-9 Serial Data No.10 (IC7501->IC6001)

NO. 11 TRANSMISSION	INFORMATION	CONTENTS	
		0	1
BIT 7	TIME SEARCH	ON	OFF
BIT 6	VISS MODE	INDICATION	NO INDICATION
BIT 5	BLANK SEARCH	ON	OFF
BIT 4	INTRO SEARCH	ON	OFF
BIT 3	VISS WRITE	INDICATION	NO INDICATION
BIT 2	VISS ERASE	INDICATION	NO INDICATION
BIT 1	LAP TIME	INDICATION	NO INDICATION
BIT 0	JOG	INDICATION	NO INDICATION

Fig. S4-10 Serial Data No.11 (IC6001->IC7501)

NO. 12 TRANSMISSION	INFORMATION	CONTENTS	
		0	1
BIT 7	SERVICE INFORMATION DISPLAY	INDICATION	NO INDICATION
BIT 6	INSERT AND DUB. DISPLAY	"INSERT" and "DUB" MARK DISPLAY	NO INDICATION
BIT 5 & BIT 4	FRAME NUMBER DISPLAY	LEFT DIGIT OF FRAME NUMBER	
BIT 3 ~ BIT 0	FRAME NUMBER DISPLAY	RIGHT DIGIT OF FRAME NUMBER	

Fig. S4-11 Serial Data No.12 (IC6001->IC7501)

No. 13 TRANSMISSION	INFORMATION	CONTENTS
BIT 7 ~ BIT 5	OSD DISPLAY COMMAND	BIT 7 / BIT 6 / BIT 5 / COMMAND 1 / 1 / 1 / NO INDICATION 1 / 0 / -- / TRACKING DISPLAY 0 / 1 / 1 / REC/PAUSE, TIME DISPLAY 0 / 0 / 1 / TAPE REMAINING DISPLAY 0 / 0 / 0 / NO INDICATION 1 / 1 / 0 / OSD DISPLAY INHIBITION
BIT 4 ~ BIT 0	DISPLAY MODE DATA	DISPLAY DATA FROM MODE

Fig. S4-12 Serial Data No.13 (IC6001->IC7501)

TRANSMISSION No. 14					
No	FUNCTION	CODE BIT 7 → BIT 0	No	FUNCTION	CODE BIT 7 → BIT 0
1	JOG ON	10000000	11	X - 1	10000100
2	NO OPERATION	11111111	12	X 1	10000101
3	FORWARD SLOW	00001100	13	REV 1	10000110
4	REVERSE SLOW	00001101	14	CUE 1	10000111
5	X - 1/30	10010110	15	REV 2	10001000
6	X 1/30	10010111	16	CUE 2	10001001
7	X - 1/10	10011000	17	REV 3	10001100
8	X 1/10	10011001	18	CUE 3	10001101
9	X - 1/5(SHUTTLE)	10000001	19	X - 1/5(JOG)	10001010
10	X 1/5(SHUTTLE)	10000011	20	X 1/5(JOG)	10001011

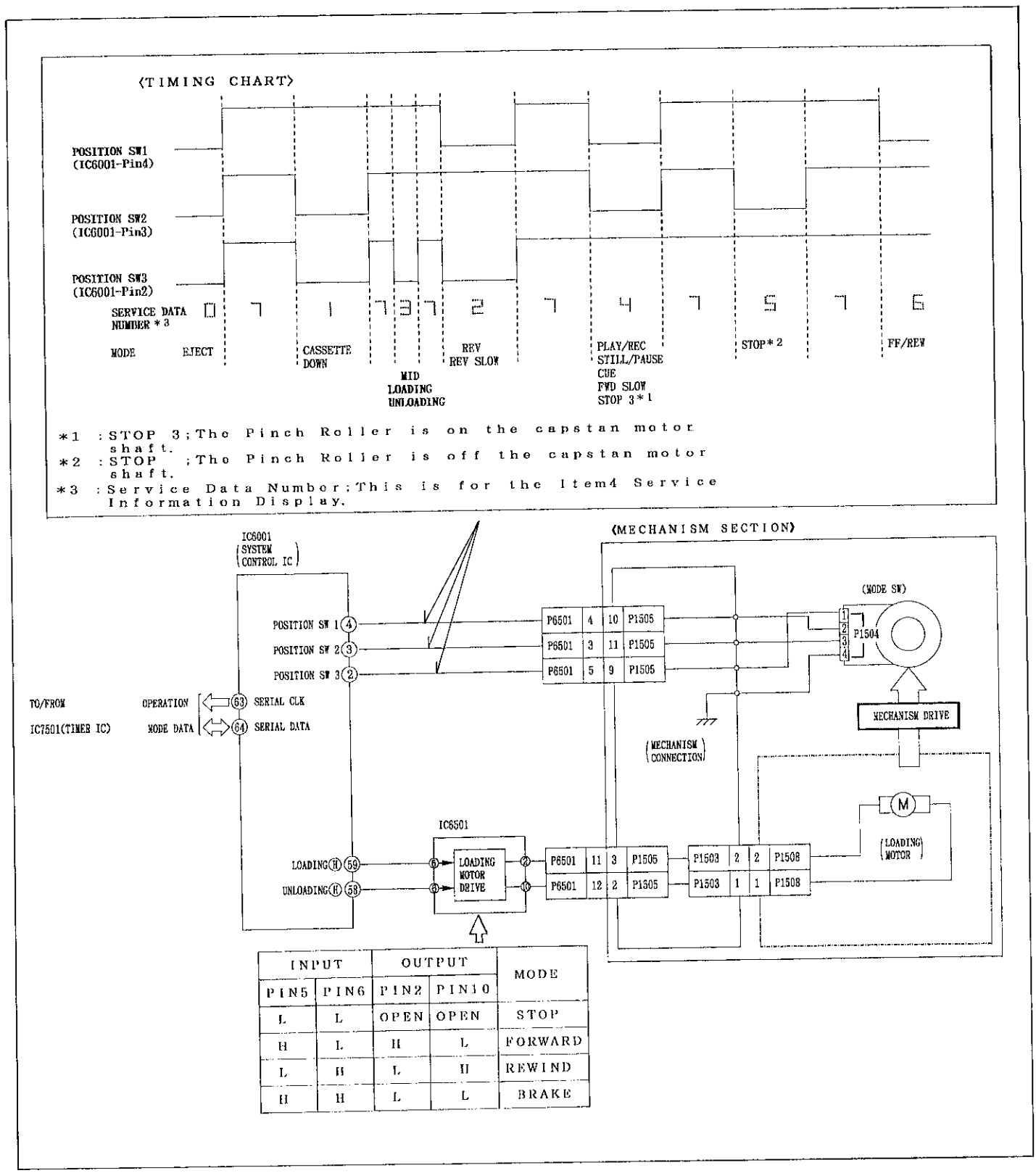
Fig. S4-13 Serial Data No.14 (IC7501->IC6001)

2-2. Mechanism Control Circuit

All mechanism movement except the reel rotation is driven by the loading motor. The microprocessor IC6001 controls the mechanism by controlling the loading motor. The Mode SW sends mechanism position information to the IC6001.

< Example of Mechanism Control in FF Mode >

(1) When pressing FF mode button, the command data is transmitted from IC7501 (TIMER IC) to IC6001 to drive the loading motor.
(2) The loading motor drives the mechanism components to the FF mode position.
(3) The Mode SW sends the mechanism position information.
(POSITION SW 1 : POSITION SW 2 : POSITION SW 3 : = L : H : H) to IC6001.



INPUT		OUTPUT		MODE
PIN5	PIN6	PIN2	PIN10	
L	L	OPEN	OPEN	STOP
H	L	H	L	FORWARD
L	H	L	H	REWIND
H	H	L	L	BRAKE

Fig. S5 Mechanism Control Circuit

2-2-1. Cassette-Insert Detection

The cassette up/down position is detected by the take-up photo transistor Q1501. When the cassette tape is inserted into the cassette carriage, the light from Sensor LED D1501 to Q1501 is cut by the right side of cassette. Then, the cassette tape goes to the cassette down position.

2-3. Safety Circuit

The microprocessor IC6001 detects conditions that might cause damage to the tape or mechanism. When such a condition is detected, the IC6001 will prevent further operation.

2-3-1. Cylinder Lock

The IC6001 uses the head switching signal produced from FG/PG signals (IC6001-Pin43 Input) to sense cylinder lock. If the head switching signal is not received due to cylinder lock during the recording or playback, the microprocessor IC6001 places the VCR in the Stop mode. During the timer recording, it turns the VCR power Off.

2-3-2. Loading & Unloading Mechanism Lock

The mechanism lock is determined by the IC6001 not not receiving the correct mechanism position information from the mode switch. If the mechanism locks during the loading operation, the tape is unloaded and the cassette is ejected. If the mechanism locks during the unloading operation, the power is turned Off.

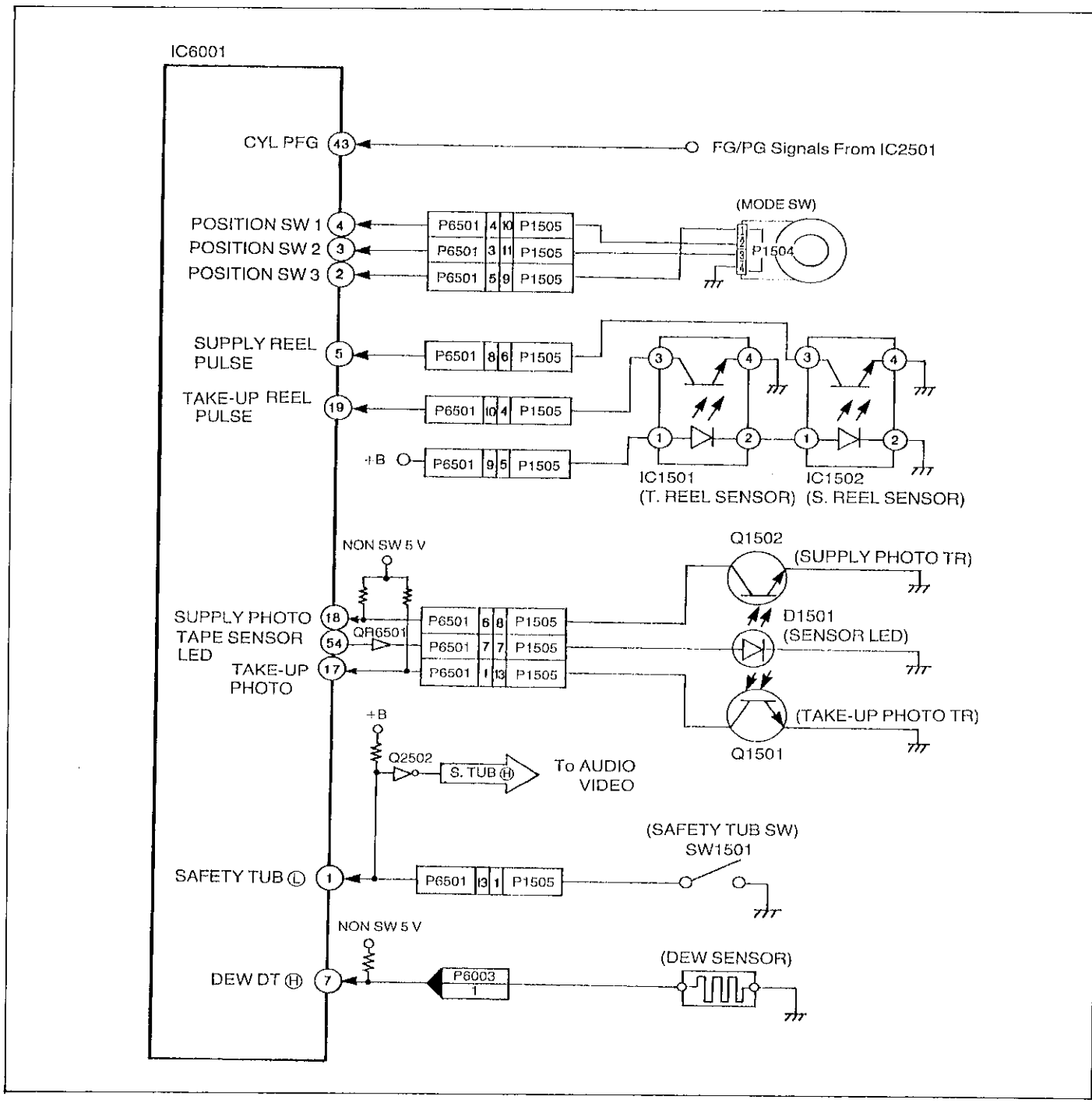


Fig. S6 Safety Circuit

2-3-3. Cassette Loading & Unloading Lock

(1) If the mechanism locks during the cassette-in operation, the cassette is ejected.
(2) If the mechanism locks during the cassette eject operation the mechanism performs the cassette-in operation and retries the cassette eject operation. If the mechanism locks again the power is turned Off.

2-3-4. Reel Sensor

The reel sensor (IC6001-Pin(5),(19)) detects a pulse generated by the Supply and Take-up reels to determine if reels are rotating. If the reel rotation is not smooth, the microprocessor places the VCR in the Stop mode to prevent tape damage.

2-3-5. Supply and Take-up Sensors

Supply and take-up photo transistors are used to sense the beginning and end of a tape. The tape has transparent leaders at the beginning and end. When these transparent leaders enter the tape transport path, they allow infrared light from the sensor LED to reach either one of the tape end sensors (photo-transistor). If the take-up end sensor detects the light, the microprocessor IC6001 places the VCR in the Stop mode and then performs a short cue. If the supply end sensor is triggered, the microprocessor activates the Stop mode and the Rewind mode. The Rewind mode continues until the take-up end sensor detects the end of the tape. The tape beginning is detected by a low signal at IC6001 pin(17). The tape end is detected by a low signal at IC6001 pin(18). If light is received at both sensors at same time the cassette is ejected.

2-3-6. Safety Tab Switch

A recorded video cassette can be protected against accidental erasure by breaking off the tab on the cassette. The cassette can now only be used for playback. To be able to record on the cassette, cover the hole with adhesive tape. If the safety tab on the cassette has been removed, the Safety Tab Switch is off(open) and a high signal is supplied to pin 1 of IC6001. The IC6001 will not go into the Recording mode and automatically places the VCR in the Playback mode.

2-3-7. Dew Sensor

If excessive moisture or condensation is present inside the machine (an internal humidity of more than 98%) the unit will stop if running. Until the moisture level decreases only the Eject mode will operate. To sense the humidity, a dew sensor is used. The sensor is a special variable resistor which changes resistance with ambient humidity. The sensor ranges in resistance from about 5k ohm at 90% humidity to about 50k ohm at 98% humidity. Normally, the voltage across the sensor is low because of its low resistance. But if moisture condenses inside the unit, the voltage of pin7 of IC6001 increases to indicate a Dew condition.

2-4. Special Features and Controls

2-4-1. STOP 3 Specifications

a) The STOP 3 is the playback standby mode.
b) The unit is put into the STOP 3 position after tape loading if the cassette tape does not have a clear loader tape.
c) If the unit is in the STOP 3 position when the power is switched off (including the timer a standby mode), the unit goes to the STOP position.
d) If a cassette is in the unit when the power is turned on, the unit goes to the STOP 3 position.

2-4-2. Standby in the STOP 3 Position

a) The unit goes to the STOP 3 position if the STOP mode is selected during the PLAY or REC operations. The unit then loosens the tape tension by performing the Reverse Still Advance. The Reverse Still Advance corresponds to the FG 40 pulses of the capstan (irrespective of SP/EP modes). The cylinder continues to rotate.
b) After about 10 minutes in the STOP 3 mode, the unit shifts to the STOP position and the cylinder continues rotating.
c) After another 10 minutes, the unit stops the cylinder rotation.

2-4-3. Remaining Tape Time Calculation in FF/REW mode

a) If the calculation of the remaining tape time is not completed before the FF or REW operation starts, the unit runs the tape by the CUE or REV operation to calculate the remain tape time.

2-4-4. CUE/REV Search

Operation on the unit control panel.
a) If the SHUTTLE Ring is rotated and released in less than 0.7sec during the playback mode (while playback picture appears), the unit is put into the CUE/REV lock mode. If the SHUTTLE Ring is kept rotated longer than 0.7sec., the unit will return to the PLAY mode when the SHUTTLE Ring is released.

2-4-5. FR (Forward/Reverse) Search

Operation on the unit control panel.
a) If the SHUTTLE Ring is kept rotated during FF or REW, the unit is put into the CUE or REV mode.
b) When the SHUTTLE Ring is released, the unit returns to the FF or REW mode.

(Operation with the Remote Controller)
a) If the FF or REW Key is kept depressed during FF or REW, the unit is put into the CUE or REV mode.
b) When the FF or REW Key is released, the unit turns to the FF or REW mode.

2-4-6. Input/Output Chart for IC6001
(Part No.: MN67434VRRV / MN67434VRSA)

<table>
<tr><th>Pin Number</th><th>Input/Output</th><th>Port Name</th><th>Function</th></tr>
<tr><td>1</td><td>I</td><td>SAFETY-TAB</td><td>When inserting the cassette tape with safety tab, this port is low. When there is no safety tab, this port is high to prevent recording.</td></tr>
<tr><td>2
3
4</td><td>I
I
I</td><td>POSITION SW 3
POSITION SW 2
POSITION SW 1</td><td>
<table>
<tr><th>P. SW 3</th><th>P. SW 2</th><th>P. SW 1</th><th>Position (Mode) Name</th></tr>
<tr><td>0</td><td>0</td><td>0</td><td>EJECT</td></tr>
<tr><td>0</td><td>0</td><td>1</td><td>CASSETTE DOWN</td></tr>
<tr><td>0</td><td>1</td><td>0</td><td>REV, REV SLOW</td></tr>
<tr><td>0</td><td>1</td><td>1</td><td>MID(LOADING / UNLOADING)</td></tr>
<tr><td>1</td><td>0</td><td>0</td><td>PLAY/REC, STILL/PAUSE, CUE, FWD SLOW STOP3*1</td></tr>
<tr><td>1</td><td>0</td><td>1</td><td>STOP</td></tr>
<tr><td>1</td><td>1</td><td>0</td><td>FF / REW</td></tr>
<tr><td>1</td><td>1</td><td>1</td><td>INTERMEDIATE</td></tr>
</table>
(*1) The Pinch Roller is on the capstan motor shaft.
</td></tr>
<tr><td>5</td><td>I</td><td>SUPPLY REEL PULSE</td><td>Sepply Reel Pulse Input
(For detecting tape remaining)</td></tr>
<tr><td>6</td><td>I</td><td>NORMAL/SERVICE /TEST</td><td>Service Mode Setting
Normal Mode : High
Service Mode : Middle
Test Mode : Low</td></tr>
<tr><td>7</td><td>I</td><td>DEW</td><td>When Dew is detected, this port is middle.
Normally, this port is low.</td></tr>
<tr><td>8</td><td>I</td><td>TEST</td><td>Not used (Low setting)</td></tr>
<tr><td>9</td><td>I</td><td>ENVELOPE SELECT</td><td>The playback envelope video signal level is detected at this input to select the video head in the special special playback modes.</td></tr>
<tr><td>10</td><td>O</td><td>ROTARY SW</td><td>This signal is supplied to the chrominance circuit to perform the phase rotation.</td></tr>
<tr><td>12</td><td>O</td><td>HEAD AMP SWITCH</td><td>This signal is supplied to the head amp circuit to switch the video head, SP or LP.</td></tr>
<tr><td>14</td><td>O</td><td>ARTIFICIAL V / H / N</td><td>Artificial Vortical Sync Signal is supplied to video circuit to stabilize the picture in the special playback modes.</td></tr>
<tr><td>17</td><td>I</td><td>TAKE-UP PHOTO</td><td>Take-up Side Photo Sensor Input
(For detecting tape beginning)</td></tr>
<tr><td>18</td><td>I</td><td>SUPPLY PHOTO</td><td>Supply Side Photo Sensor Input (For detecting tape end.)</td></tr>
</table>

Pin Number	Input/Output	Port Name	Function
19	I	TAKE-UP REEL	Take-up Reel Pulse Input (For detecting tape remaining and reel (Cap.)lock.)
20	O	SP / LP	Tape Speed Output SP : Low LP : High
47	O	VTR(H)	VTR / TV Switch Output VTR : High TV : Low
48	O	SP(H)	Tape Mode Output SP : High LP : Low
54	O	SENSOR LED ON (L)	When turning on the Sensor LED, this port is low. 1) STOP Mode : No lit. 2) FF, REW, CUE, REV Modes : DC is lit. 3) EJECT Mode : Pulse blinking. (Cycle:320[msec])
55	O	VOLTAGE CHANGE (H)	When increasing the drive torgue of loading motor to perform the FF/REW mode, this port is low.
58	O	UNLOADING (H)	When unloading, this port is high.
59	O	LOADING (H)	When loading, this port is high.
63	O	SERIAL CLOCK	Serial Clock Output
64	I/O	SERIAL DATA	Serial Data In/Out
66	O	DELAYED REC(H)	When the video goes to the recording mode after a delay from the video recording command, this port is high.
67	O	DELAYED AUDIO REC (H)	When the audio goes to the recording mode after a delay from the audio recording command, this port is high.
68	O	FULL ERASE (H)	When the video goes to the recording mode, this port is high.
69	O	REC (H)	When the video goes to the recording mode, this port is high.
70	O	NTSC (L)	System Output NTSC : Low PAL : High
71	O	AUDIO MUTE (H)	When the audio goes to the mute mode, this is high.
72	O	CAPSTAN REVERSE (H)	When the capstan motor rotates in reverse, this is high.
73	O	AUDIO EE (H)	When the audio goes to the EE mode, this is high.

Pin Number	Input/Output	Port Name	Function
75	O	CURRENT EMPHASIS (H)	When the servo goes to the edit mode, this is high.
76	O	FF/REW (L)	When the servo goes to the FF/REW mode, this is low.
78	O	VIDEO EE (L)	When the video goes to the EE mode, this is low.
79	O	TRICK (L)	When the video goes to the special playback (CUE, REV, SLOW, STILL) mode, this is low.
80	O	POWER OFF (H)	Power ON/OFF Control is low when the power switch is turned on.
84	I	RESET (L)	When reseting the IC6001, this port is low.

2-5. Mechanical Mode Operation

Refer to Item 2-2. Mechanism control circuit.

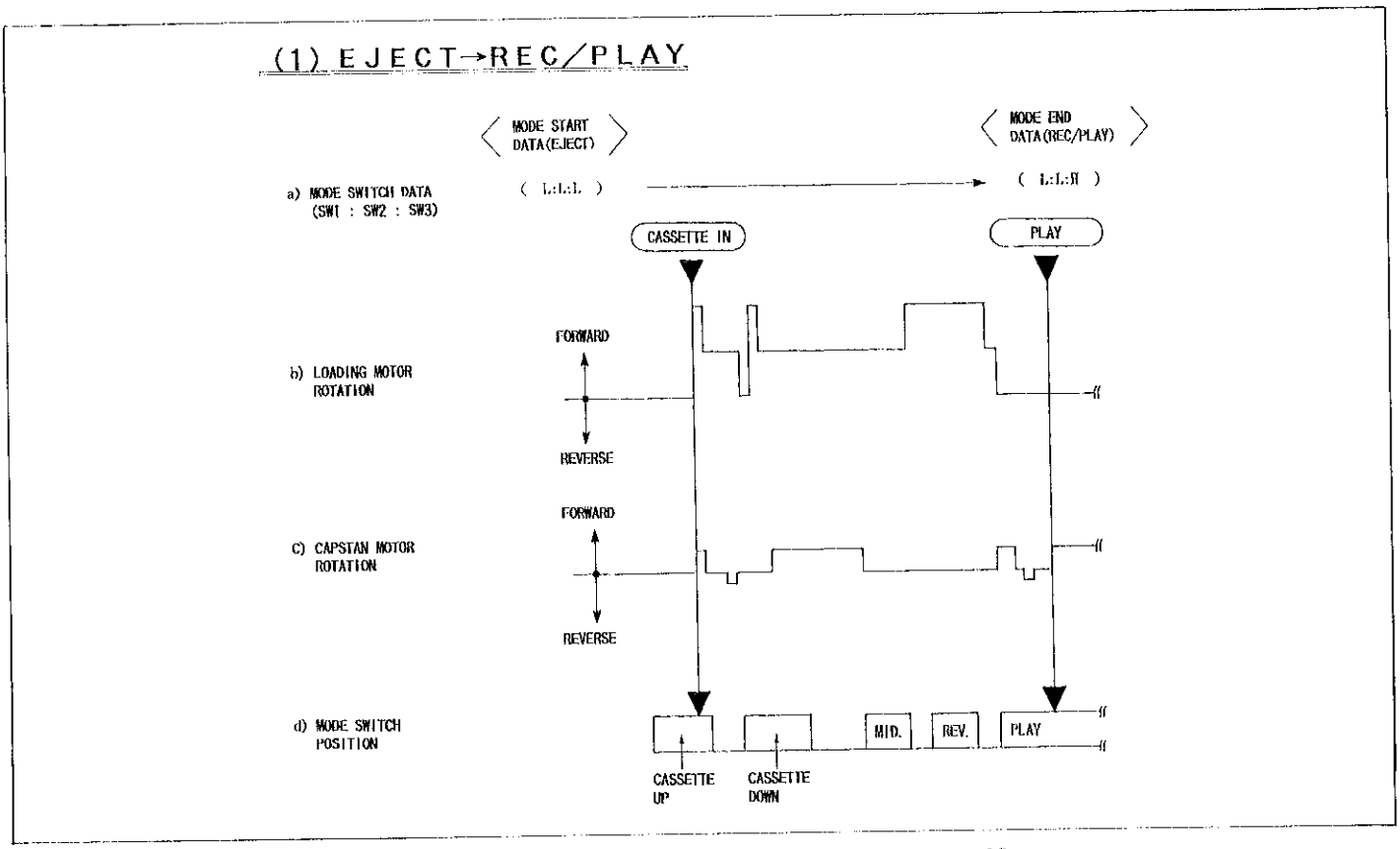


Fig. S7 Mechanical Mode Operation From Eject TO REC/PLAY

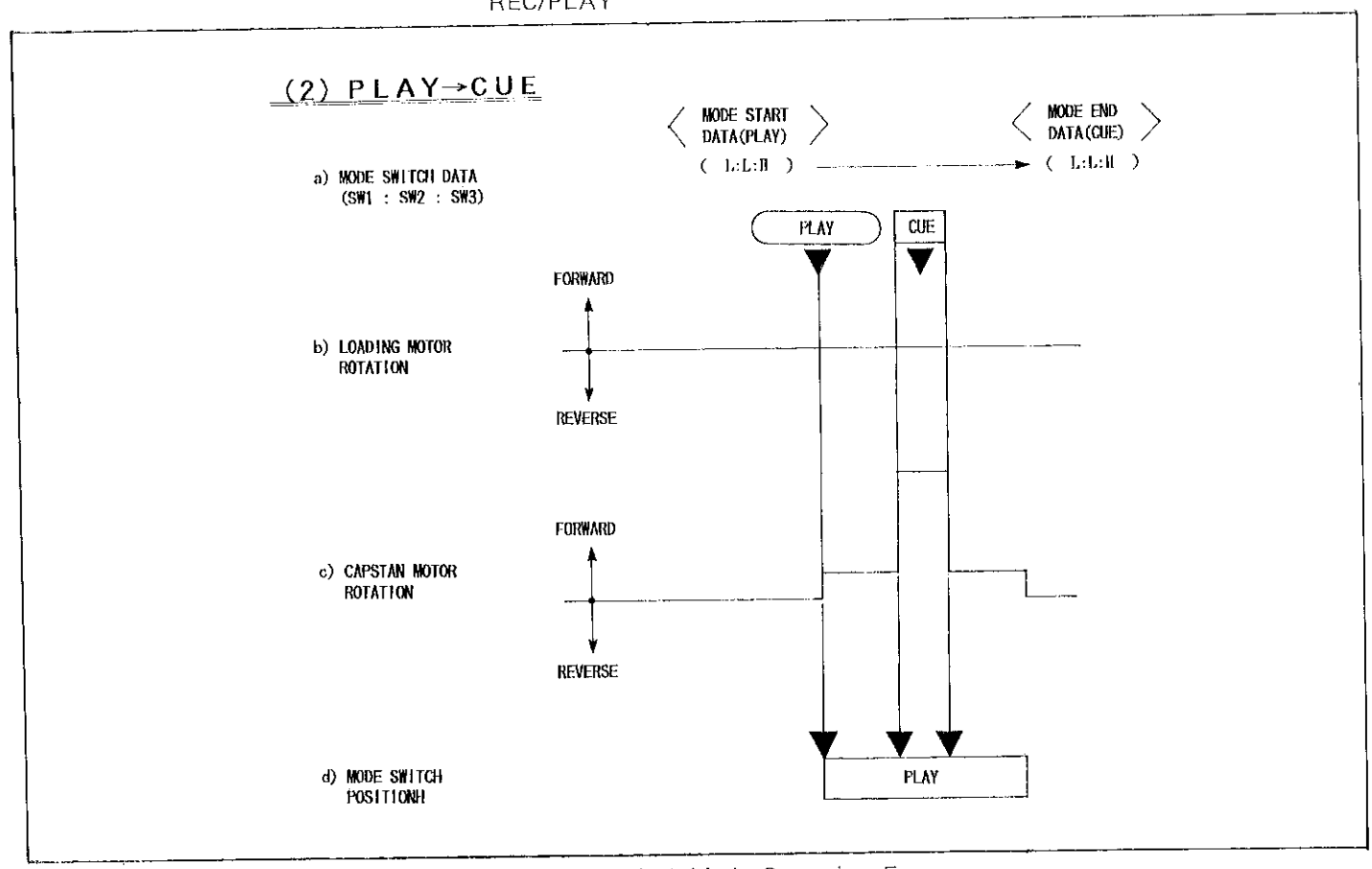


Fig. S8 Mechanical Mode Operation From PLAY TO CUE

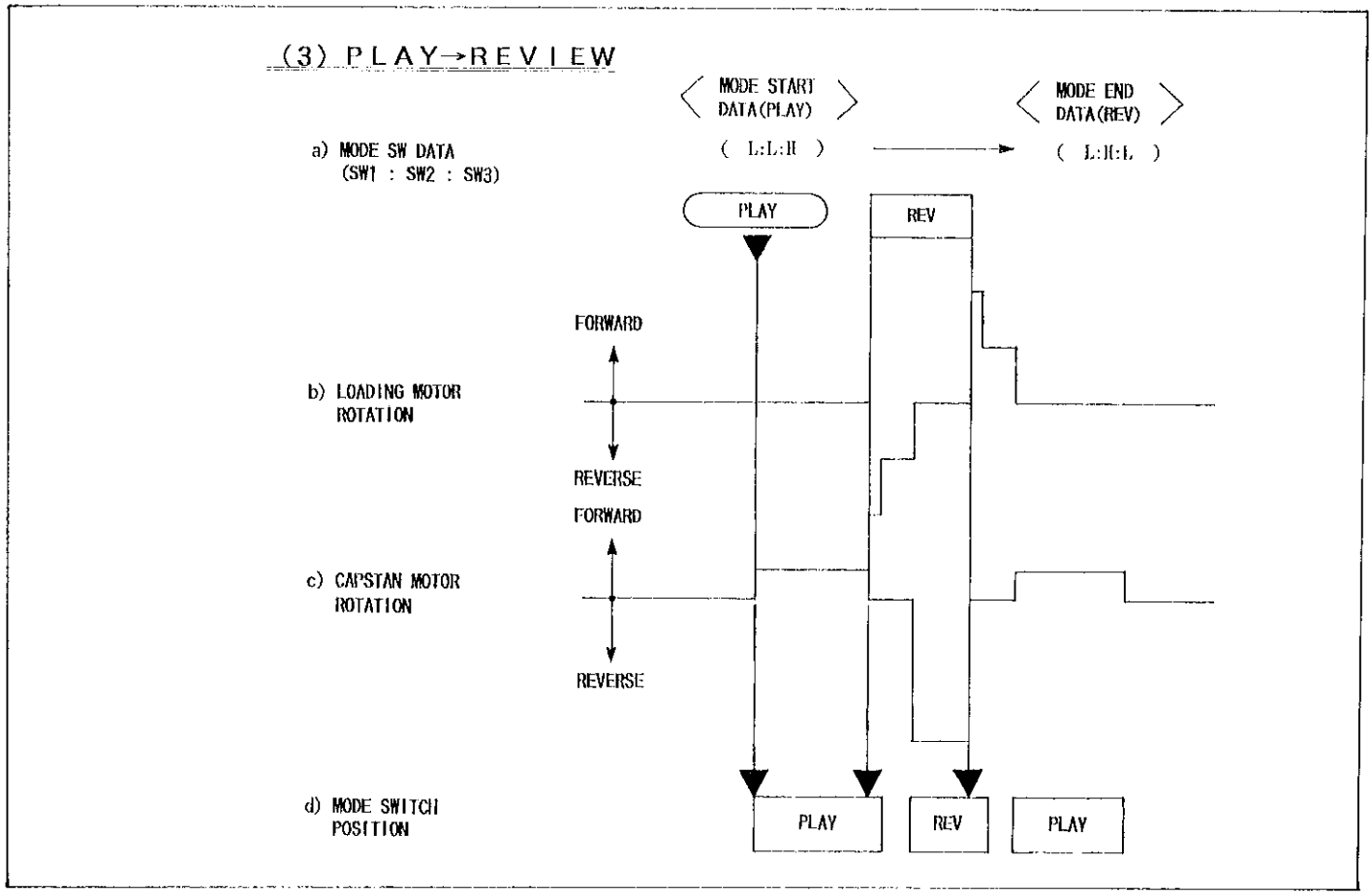


Fig. S9 Mechanical Mode Operation From PLAY TO REVIEW

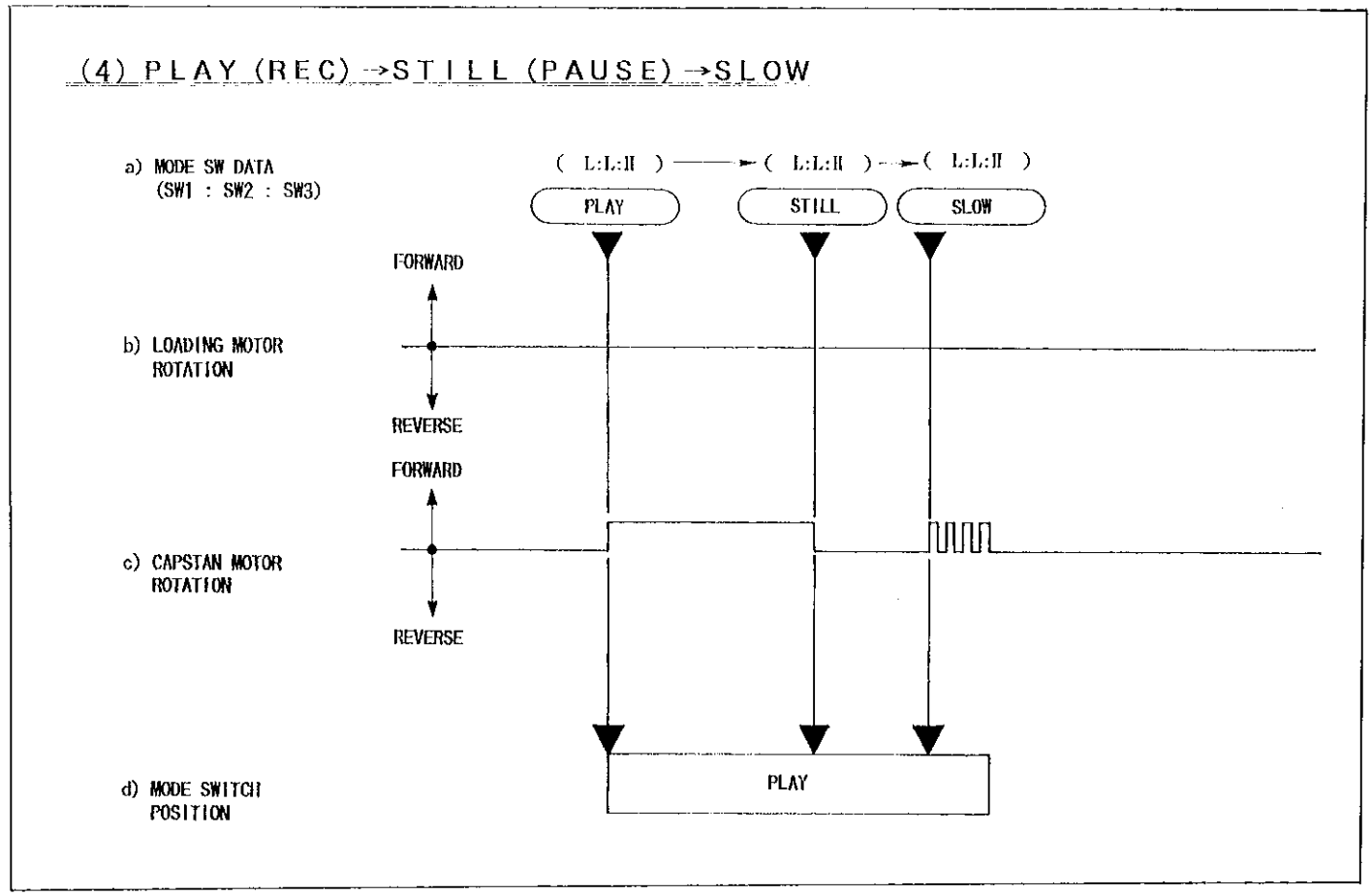


Fig. S10 Mechanical Mode Operation From PLAY TO SLOW

(5) PLAY→STOP 3→STOP

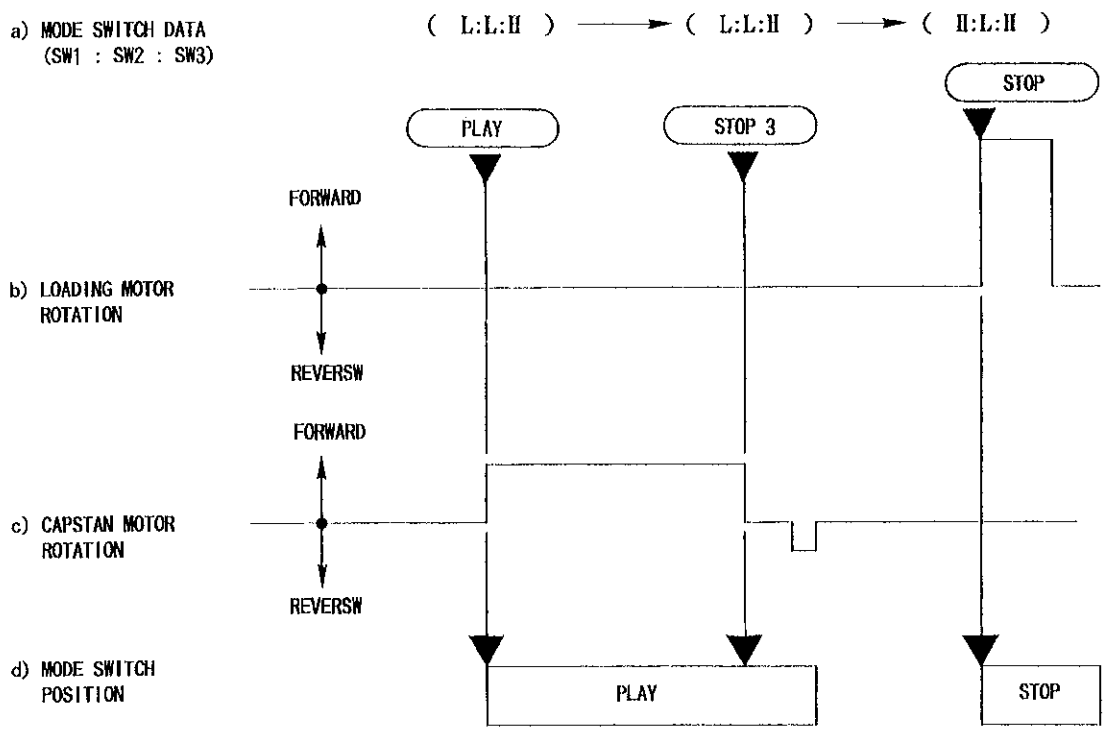


Fig. S11 Mechanical Mode Operation From PLAY TO STOP

(6) PLAY→STOP 3→FF

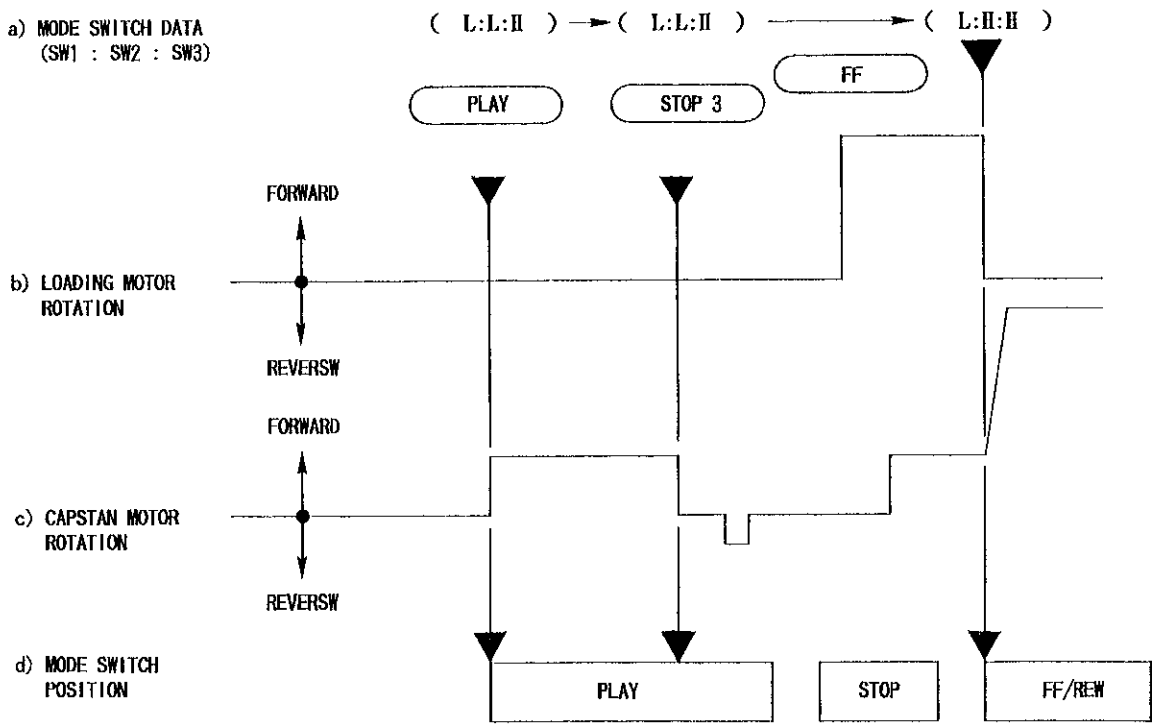


Fig. S12 Mechanical Mode Operation From PLAY TO FF

3. Serial Data/Clock Transmission Error Display

If the Serial Data/Clock is not transmitted from IC6001 to IC7501, "E9" is displayed as shown in Fig.T1. This indication will be displayed either during the Service Information Display mode or in normal mode.

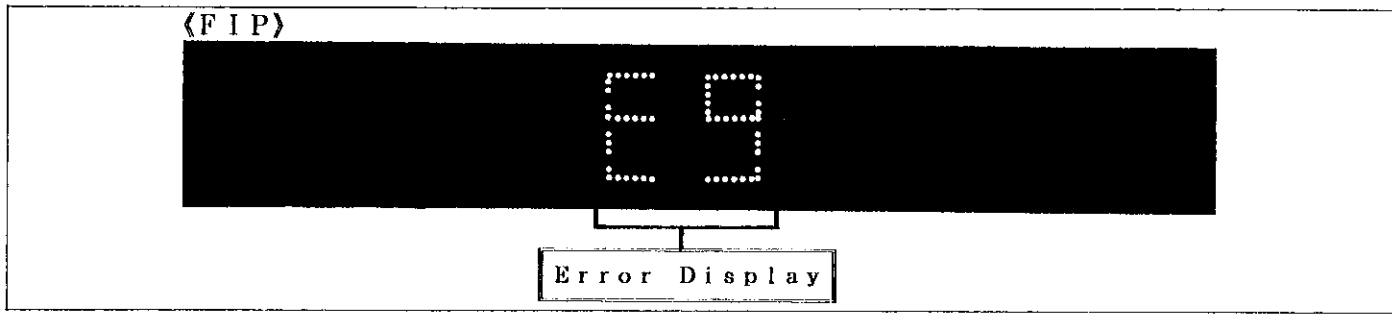


Fig. T1 Serial Data/Clock Transmission Error Display

4. Service Information Display

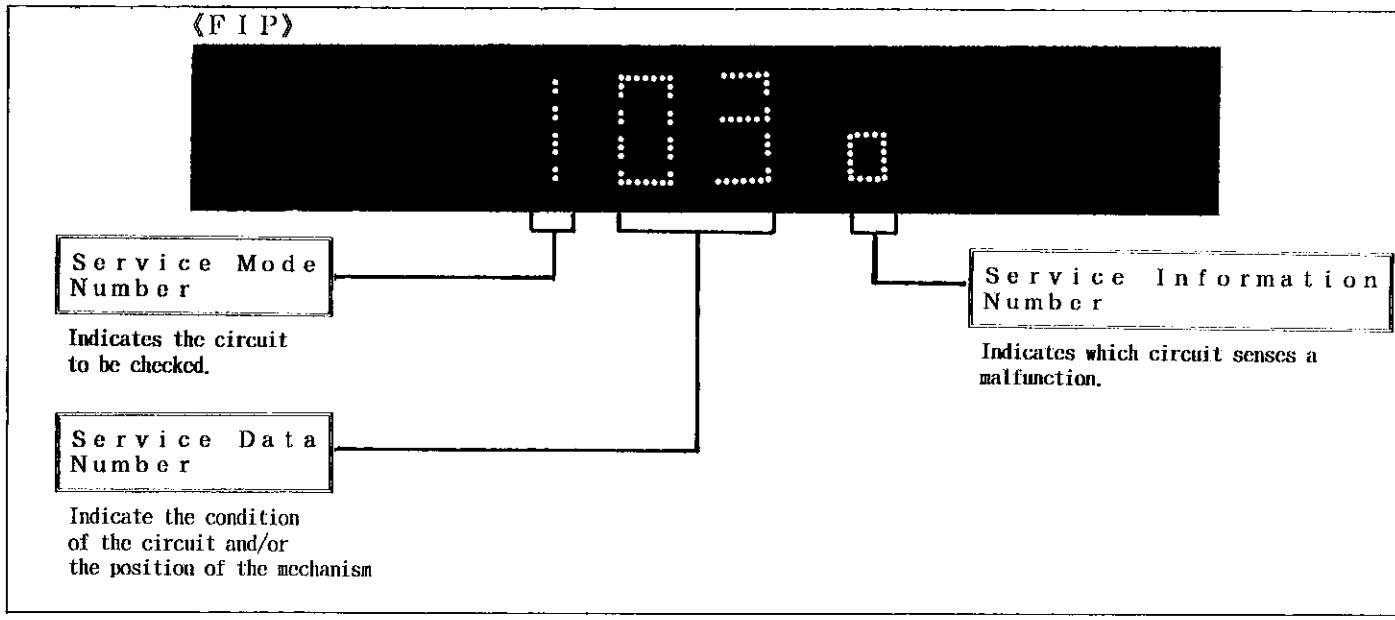

《F I P》
Service Mode Number
Indicates the circuit to be checked.
Service Information Number
Indicates which circuit senses a malfunction.
Service Data Number
Indicate the condition of the circuit and/or the position of the mechanism

Fig. D1 Service Information Display

4-1. Purpose of Service Information Display

This information aids trouble shooting by indicating the source of the malfunction. The service mode number & service data number are used by the technician during repair while the service information can be used by the consumer to diagnose malfunctions allowing the technician to provide a more accurate repair cost estimate and reduce repair time.

4-2. Turning on Service Information Display

There are two ways to turn on the Service Information Display.

(1) Turn the Shuttle Ring to FF then push the Eject button. The Service Information will be displayed for 1 minute.
(2) Connecting a jumper wire between TPSERV and TPGND will display the service information indefinitely.

In the Service Information Display, there are four digits divided into 3 functions.
The first digit indicates which other 6 service modes that the unit is Currently in.

MODE 1 : Check tape protection circuit
MODE 2 : Check tape transport mechanism
MODE 3 : Check mode switching operation
MODE 4 : Check control buttons
MODE 5 : Check capstan motor
MODE 6 : Check cylinder motor

The second and third digits are service data which indicate the condition of the circuit or mechanism being checked.

The fourth digit is the service Information display. It is to be used by the consumer to help determine the source of a malfunction. The service information display operates independently of the service modes and stores the fault indication in memory for as long as AC power is supplied.

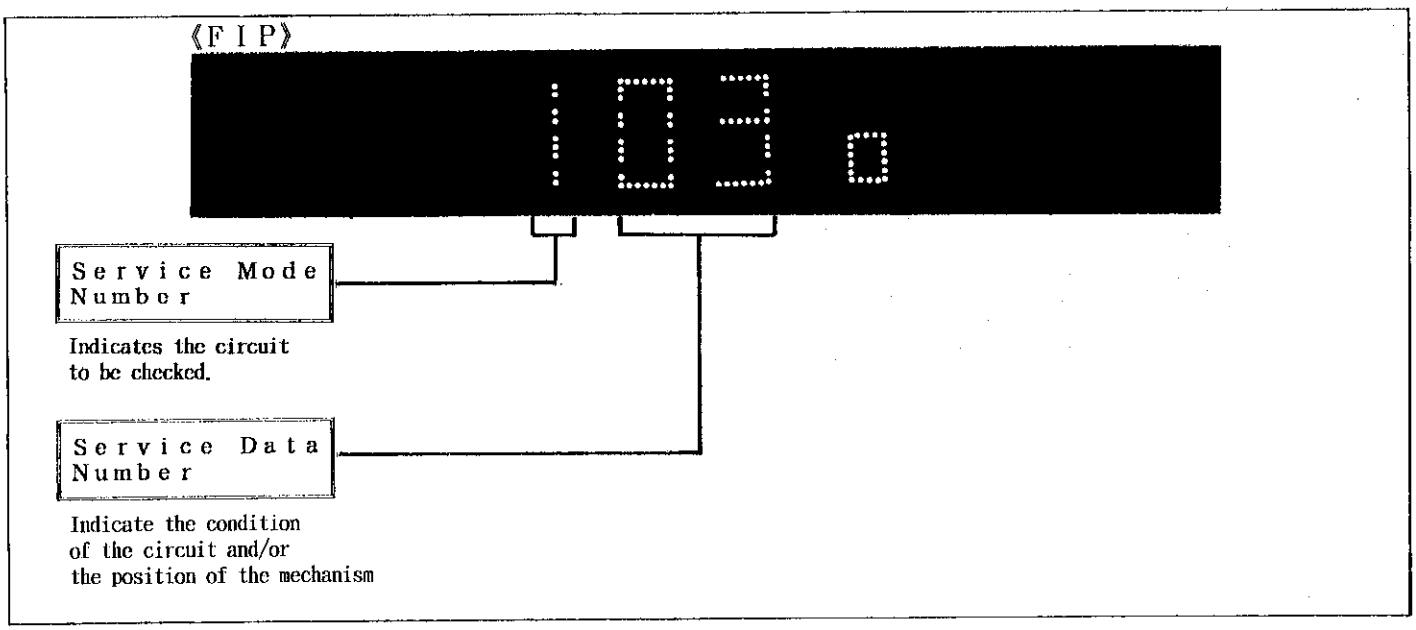

《F I P》
Service Mode Number
Indicates the circuit to be checked.
Service Data Number
Indicate the condition of the circuit and/or the position of the mechanism

Fig. D2 Service Mode Number and Service Data Number on S.I.D.

(1) Turn on Service Information Display.
(2) To change Service Modes turn the shuttle ring to FF then push the Eject button.
(3) Mode 1 : Checks that the Sensor LED, Supply & Take-up Sensor circuits check the circuits by blocking the light from the Sensor LED to either or both Supply & Take-up Sensors.
When the light is blocked to both sensors, "00" should be indicated on the service data number.
When the light is blocked to the supply sensor, "01" should be indicated.

(4) Mode 2 : Checks the mode switch circuit while indicating mechanism position.
Service Data Numbers indicate the position of the mode switch and there by the mechanism position.

(5) Mode 3 : Checks that mode switch circuit operations have been completed.
Service Data Number should indicate "00" after each mechanism operation is completed.

(6) Mode 4 : Checks the operation circuit.
Indicates if IC6001 receives the operating commands from the mode buttons and/or remote controller.

(7) Mode 5 : Checks the capstan motor circuit.
Indicates if the IC6001 has received the command to rotate the capstan motor.

(8) Mode 6 : Checks the cylinder motor circuit.
IC6001 has received the command to rotate the cylinder motor.

<NOTE>
Refer to Fig.D5 for details of Service Data Number.

4-4. Service Information Number

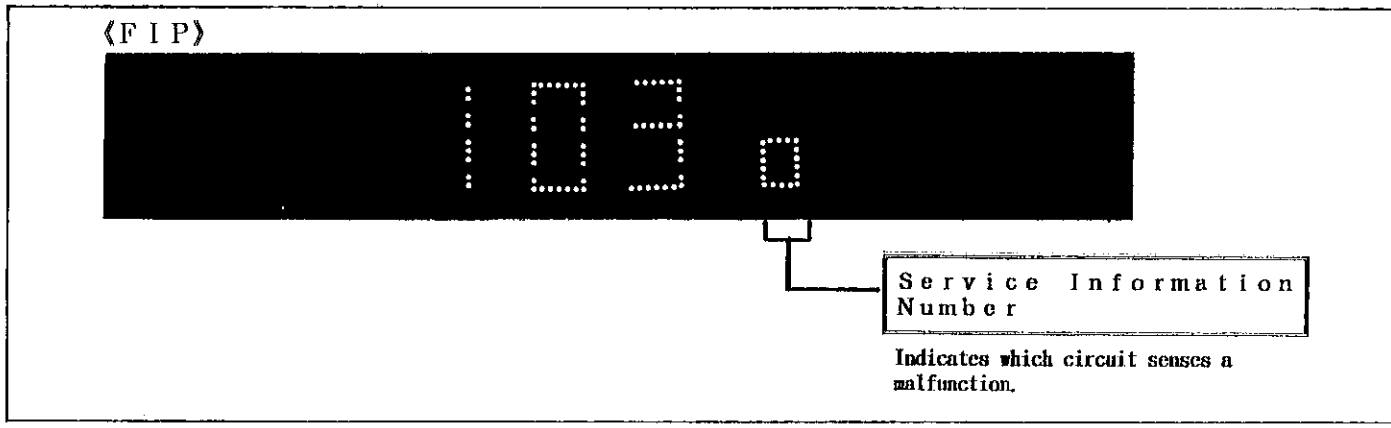


Fig. D3 Service Information Number on S.I.D.

Refer to Fig.D4 for details of Service Information Number.

Note:

The Service Information Number display is independent of the service mode display.
The Service Information Number will be stored as long as AC power is supplied.
If a second error occurs, the most current error will be displayed.

Service Information Number	Malfunction
0	Normal (No problem)
1	Cylinder stop
2	Tape reel stop
3	Stop at position other than 4 or 6
4	Stop during unloading
5	Falty capstan rotation
6	Stop during Cassette-In/Eject operation

Fig. D4 Service Information

Service mode Number	Note for checking Service Data Numbers	Service Data Numbers	Indication	Remarks
1	———	00	No light detected at either sensor	Tape not required
		01	Tape Begining. Light to Supply Photo Sensor is blocked.	
		02	Tape End. Light to Take-up Photo Sensor is blocked.	
		03	Light detected at both sensors.	
2	———	00	EJECT	Tape Reuired *1 : STOP3 ; The Pinch Roller is on the capstan motor shaft. *2 : STOP ; The Pinch Roller is off the capstan motor shaft. Refer to Fig. D7 to Check mechanism Position and timing.
		01	Cassette-down	
		02	REV, REV SLOW	
		03	Loading/Unloading	
		04	PLAY/REC, STILL/PAUSE, CUE, FWD SLOW, STOP3 *1	
		05	STOP*2	
		06	FF/REW	
		07	Intermediate position	
3	Disregard service data displayed until mechanism operation is completed. Then the display should indicate "00".	00	Any display other than "00" indicates a fault in the mode switch circuit or system.	Tape Required.
4	Display only when the operating button is pressed.	Refer to Fig. D6		Tape not required.
5	Left digit only, disregard Right digit display.	Left Digit / Right Digit	8, 9, u, A, -, n, L, and no display indicate that the Capstan motor "PLAY" command recived by IC6001.	Tape required. If a symbol other than those listed is displayed, a malfunction in that circuit is indicated.
	Right digit only, disregard left digit display.	Left Digit / Right Digit	1, 2, 3, 4, 5, 6, 7, indicate that the Capstan motor CUE, FF, Forward slow" commands received by IC6001.	
	Right digit only, disregard left digit display.	Left Digit / Right Digit	8, 9, u, A, -, n, L, and no display indicate that the Capstan motor Reverse, Rew, Reverse Slow commands received by IC6001.	
6	Left digit only, disregard Right digit display.	Left Digit / Right Digit	1, 3, 5, 7, 9, A, n and no display indicate that the cylinder motor "ON" command received by IC6001.	Tape required. If a symbol other than those listed is displayed, a malfunction in that circuit is indicated.

Fig. D5 Service Data Display and Indication

SERVICE DATA NUMBERS	MODE BUTTONS	SERVICE DATA NUMBERS	MODE BUTTONS
3	OPERATE	54	RESET
01	EJECT	5	ZERO STOP
09	AUDIO DUB	-0	INPUT SELECT
A3	INSERT	49,4U	INDEX
-9	PAL/MESECAM	A1,A2	TRACKING(+,-)/V-LOCK
--	CHECK/PROG.	9	REPEAT
34 OR 35	∧∨, +-	8	SKIP
--	NEXT/SP/LP	--	TAPE SELECT
--	SLEEP/SHIFT	--	PROG.
A4	TIMER REC	--	NEXT
08	REC	--	RECORDING SP/LP
--	CLOCK SET	--	CANCEL
--	TUNER PRESET	10	SU(1)
80	PAUSE/STILL	11	MO(2)
0U	PLAY	12	TU(3)
00	STOP	13	WE(4)
0-,0	JOG DIAL (FRAME ADV, REVERSE ADV)	14	TH(5)
03,02	SHUTTLE RING (FF, REW)	15	FR(6)
--	TV/VTR	16	SA(7)
--	SCANNER ON/OFF	17	SU~SA(8)
--	TRANSMIT	18	MO~SA(9)
0	SEARCH	19	MO~FR(0)
8L	+ (REMOTE CONTROLLER)	3A	-/--
8	-- (REMOTE CONTROLLER)		
--	DISPLAY		

Fig. D6 Service Data Display for Service mode 4

4-5. Timing Chart from Mode SW to System control IC6001

System control IC6001 senses the mechanism position though the Mode SW.
Fig.D7 shows the timing for Service Mode Number 2.

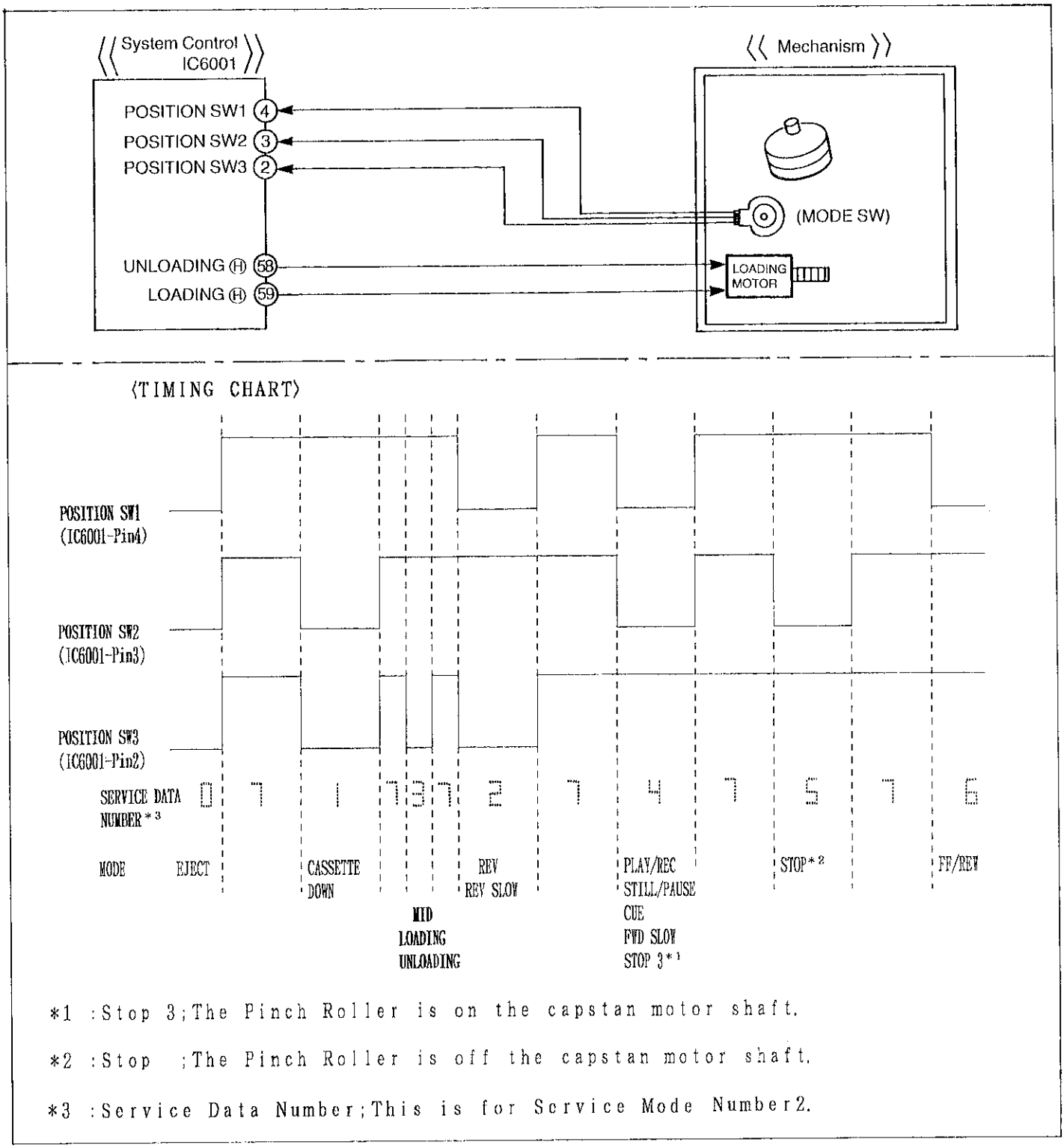


Fig. D7 Timing Chart of Mode SW

5. Parts Access Flow chart.
This chart shows the parts nessessary to gain acess to other parts.

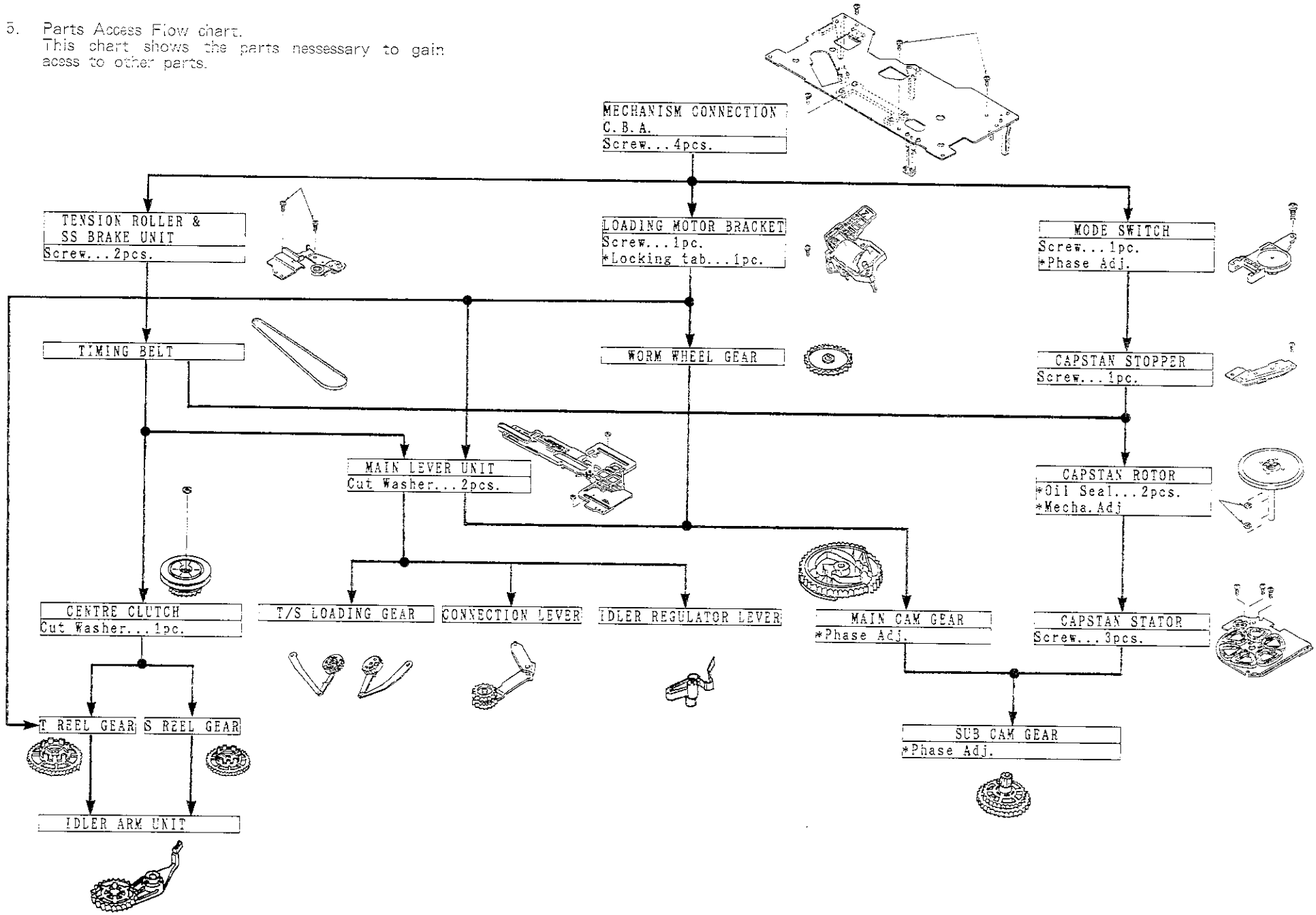
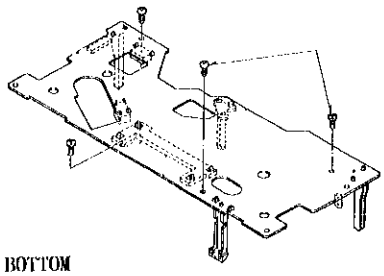
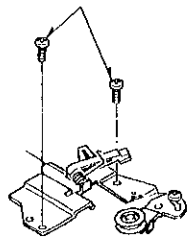
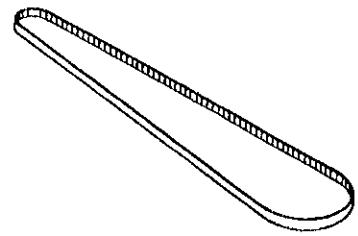
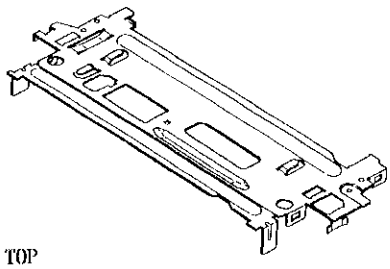
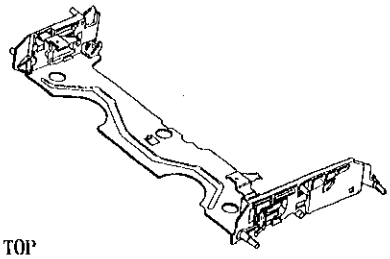
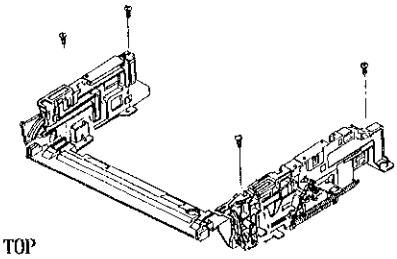
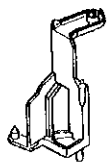
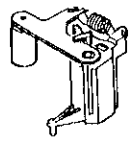
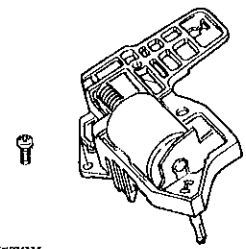
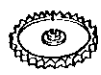
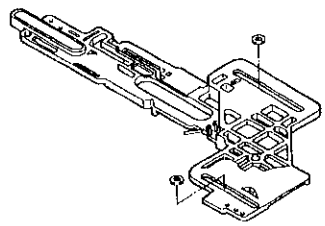
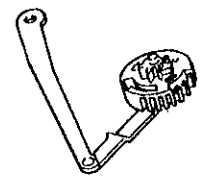
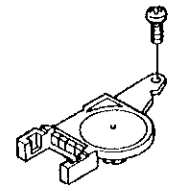
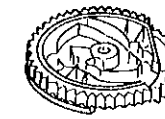
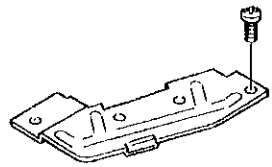
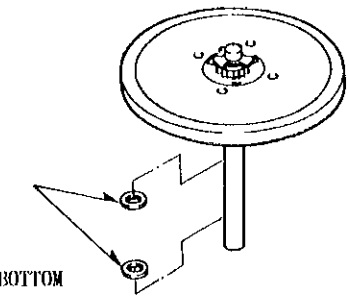
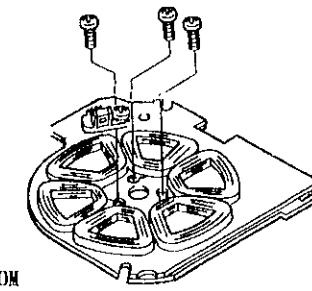
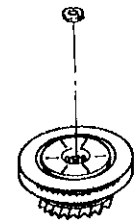
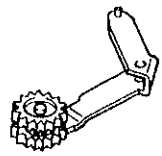
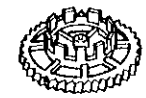
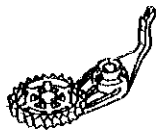
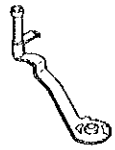
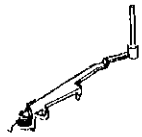
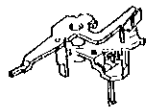


Fig. D8 Parts Access Flow Chart for Replacing.

6. Assembly/Disassembly Chart.
When disassembling this mechanism, put the parts on this table. The number indicated on each part shown the order of disassembly.

PARTS NAME	1. MACHANISM CONNECTION C. B. A.	2. TENSION ROLLER & SS BRAKE UNIT	3. TIMING BELT
PARTS & FIGURES	 BOTTOM	 BOTTOM	 BOTTOM
REMARKS			
PARTS NAME	4. TOP PLATE	5. HOLDER PLATE	6. CASSETTE HOLDER
PARTS & FIGURES	 TOP	 TOP	 TOP
REMARKS			
PARTS NAME	7. OPENER PIECE	8. PINCH ARM UNIT	9. LOADING MOTOR BRACKET
PARTS & FIGURES	 TOP	 TOP	 BOTTOM
REMARKS			
PARTS NAME	10. WORM WHEEL GEAR	11. MAIN LEVER UNIT	12. TAKE-UP LOADING ARM
PARTS & FIGURES	 BOTTOM	 BOTTOM	 BOTTOM
REMARKS			

PARTS NAME	13. SUPPLY LOADING ARM	14. MODE SWITCH	15. MAIN CAM GEAR
PARTS & FIGURES	BOTTOM	 BOTTOM	 BOTTOM
REMARKS			
PARTS NAME	16. CAPSTAN STOPPER	17. CAPSTAN ROTOR	18. CAPSTAN STATOR
PARTS & FIGURES	 BOTTOM	 BOTTOM	 BOTTOM
REMARKS			
PARTS NAME	19. SUB CAM GEAR	20. CENTER CLUTCH	21. IDLER REGULATOR LEVER
PARTS & FIGURES	BOTTOM	 BOTTOM	BOTTOM
REMARKS			
PARTS NAME	22. CONNECTION LEVER UNIT	23. TAKE-UP REEL GEAR	24. SUPPLY REEL GEAR
PARTS & FIGURES	 BOTTOM	 BOTTOM	BOTTOM
REMARKS			

PARTS NAME	25. IDLER ARM UNIT	26. P5 POST STOPPER	27. P5 STOPPER BASE
PARTS & FIGURES	 BOTTOM	TOP	TOP
REMARKS			
PARTS NAME	28. PINCH CAM GEAR	29. P5 ARM UNIT	30. TAKE-UP REEL
PARTS & FIGURES	TOP	 TOP	TOP
REMARKS			
PARTS NAME	31. TAKE-UP TENSION REGULATOR ARM UNIT	32. TAKE UP BRAKE ARM UNIT	33. CARRIAGE CONNECTION GEAR
PARTS & FIGURES	 TOP	 TOP	TOP
REMARKS			

MEMO